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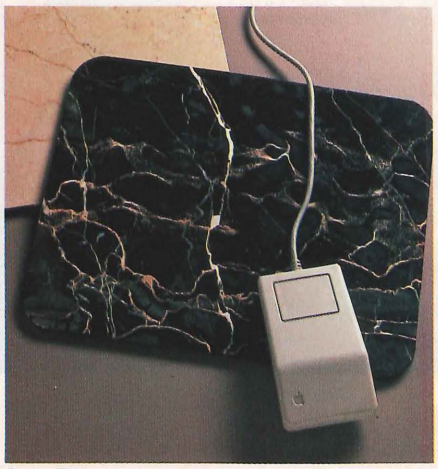
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FEATURES

COVER STORY

The Hottest Franchises for the Home-Based **Page 41**

From professional videotaping to corporate networking to children's services, there is a world of franchising opportunity out there for the home-based entrepreneur. HOME-OFFICE COMPUTING profiles four hot, home-run franchises; tells you what to ask before buying into a franchise; and offers a list of 50 franchises that you can run from home.

PROFILE

The Barth Balance **Page 51**

Laurie and Jim Barth juggle the demands of two diverse, growing home-based businesses and three growing children, thanks to a sensible organization plan, a successful mix of skills, and a little help from their relatives and friends. Also: tips on how to work around baby's needs during the first 12 months.

BUYER'S GUIDE

The Latest 386-Based Computers **Page 54**

Speedy, multitasking 80386-based personal computers have gained a solid foothold in the corporate world. But is the technology worth the price tag for a home-based business? Here we examine the hardware's upside and downside, review five of the latest offerings, and list vital specs for 33 more.

SOFTWARE

A Guide to Painless Telecommunications **Page 59**

For the price of a modem and telecommunications software, you can access bulletin boards, search national databases, and share and telecommunicate information via electronic mail. Armed with some basic knowledge and one of the 12 software packages detailed here, you can expand your computing universe—even if you're an on-line novice.

PRODUCTS

Hardware Reviews **Page 64**

Miniguide to Modems: Reviews plus a side-by-side comparison of three high-performance external 2400-baud modems: Everex's Evercom 24E, Okitel 2400 from Okidata, and Practical Peripherals' 2400 SA. *VGA Card*: speedy displays with Video Seven's V-RAM VGA. *Dot-Matrix Printer*: Toshiba's 24-pin ExpressWriter portable. *Facsimile Machines*: Olympia's OlyFax 200 and KX-F120 Fax + from Panasonic. *Answering Machine*: the Record a Call 2120.

Office Essentials **Page 72**

Information on the latest office gadgets. *This month*: A compact paper shredder, Velcro cable bundlers, eyecatching mouse pads, a fireproof safe, and a car seat for your laptop.

Software Reviews **Page 76**

Long reviews of business-oriented databases *Eighty/20* and *FileMaker II*, plus *PRD* + , a macro package. Capsule reviews of *Address Book Plus*, *Beyond Word Writer*, *Cricket Presents*, *DeluxeWrite*, *For the Record*, *GEM Artline*, *QuickLetter*, and *Turbo EMS*.

FAMILY COMPUTING

Dinosaurs Galore! **Page 86**

The lure of the dinosaur has captivated children all over the country: "Dino-mania" runs rampant in everything from movies to lunchboxes. Here, HOME-OFFICE COMPUTING reviews nine educational software packages that feature these "terrible lizards" from the earth's distant past.

Software for Learning and Leisure **Page 92**

Education: A review of the interactive, animated story package, *Flodd the Bad Guy—The Reading Magic Library*. Capsule reviews of *PC Globe* + , *Punctuation Rules*, and *Junior Typer*.

Entertainment: Long reviews of *Wizardry V: The Heart of the Maelstrom* and *Quarterstaff: The Tomb of Setmoth*. Capsule reviews of *Airplane Factory*, *Gold Rush!*, *Police Quest II: The Vengeance*, *Scavengers of the Mutant World*, and *Serve & Volley*.

Entertainment News and Hints **Page 96**

The inside scoop on futuristic sports programs, espionage games, arcade-game clones, sports software, real-time role-playing adventures, and military-reenactment simulation packages. *Plus*: hints for *Leisure Suit Larry*; *Empire*; and *John Elway's Quarterback*.

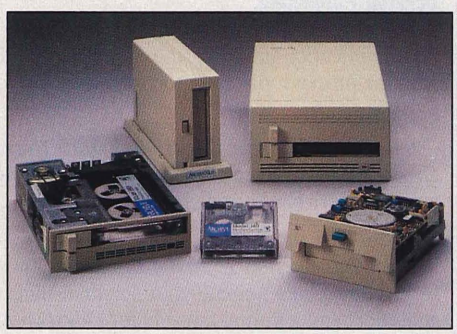


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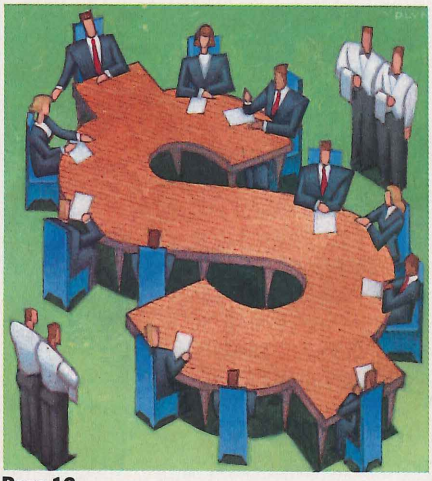
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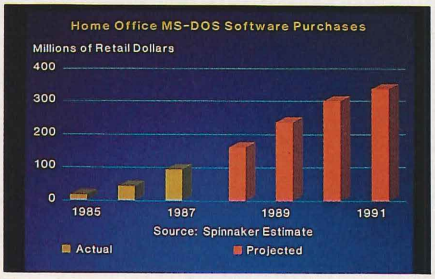
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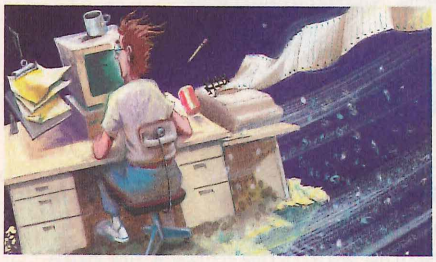
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COLUMNS

Shoptalk **Page 16**

Getting a Home-Based Travel Agency off the Ground. Home-business consultant Joanne Pratt gives readers advice on launching a home-based travel agency, drumming up clients for a bookkeeping business, and obtaining basic information on import-export enterprises.

Clinic **Page 20**

Answers to Your Computing Questions. HOME-OFFICE COMPUTING's technical staff answers readers' computing questions about add-on mass storage for the Apple IIGS, Tandy 1000 SX, and Amstrad 1640 PC. Also: drawing the line between the EGA and MCGA standards on the IBM PS/2 Model 25.

Machine Specifics **Page 22**

MS-DOS Memory Clarified; Color Mac Plus; AppleWorks GS: *A First Look.* Hardware and software news, opinions, quotes, and rumors reported by HOME-OFFICE COMPUTING's insider columnists on the IBM/MS-DOS, Macintosh, and Apple II universes.

Working Smarter **Page 38**

How to Sell and Negotiate Like a Pro. Columnists Paul and Sarah Edwards offer tips for navigating the tricky waters of negotiation. Adequate preparation and knowing when to compromise could spell the difference between success and crashing into the rocks.

Workstyles **Page 104**

Telecommuting: The Experiment that Worked. Our telecommuting senior editor Nick Sullivan takes a look at his four-year remote home-office experience and comments on the changing nature of the workplace.

DEPARTMENTS

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News, advice, tips, and a shot of humor on computing, using home-office technology, and running a home business. *This month:* Tips on preventing credit-card fraud, continuing your business education, an update on venture-capital clubs, and the latest in "fax-food."

Word Processing **Page 26**

Amí Reviewed. More than a word processor but less than full desktop publishing, Samna Corp.'s *Amí*, a graphic-capable text processor, brings Mac-like page manipulation to MS-DOS word processing—at the expense of some high-end features.

Desktop Publishing **Page 30**

Print Your Publications the Professional Way. Preparing *mechanical boards* to have your publication printed professionally has long been the realm of the paste-up artist. Now, with the proper tools and little creativity, anyone can "build boards."

Spreadsheets **Page 34**

Create Inexpensive, Yet High-Quality Presentations. Pinstripe Presenter and *PFS:First Graphics*, two presentation programs, offer you low-cost visual alternatives for jazzing up your business charts and graphs.

Finance **Page 36**

Stock Information Is Just a Keystroke Away. The Telescan on-line stock information service lets you automate your personal-investment operations to give you both an analytical and a timing advantage. *Telescan Analyzer* and *Telescan Edge* could give you the power you need to pump up your portfolio.

Best-Selling Software **Page 70**

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Advertiser Index **Page 103**

These programs have one thing in common:

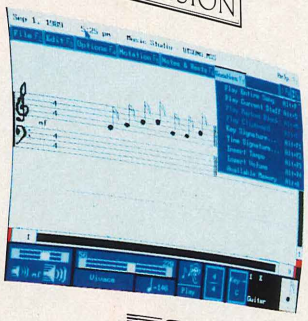
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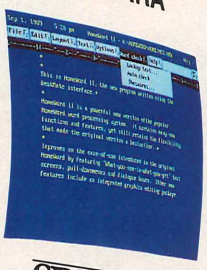
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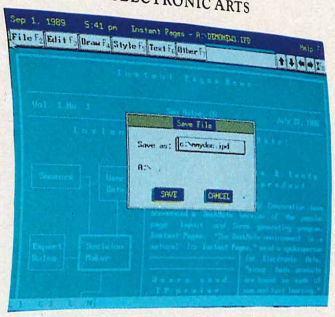
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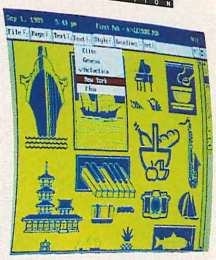
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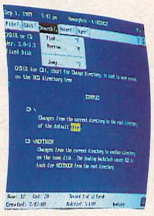
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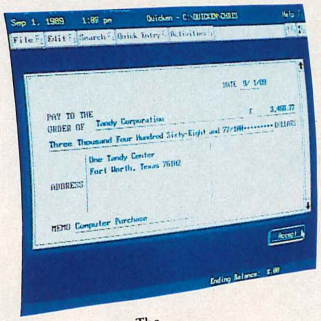
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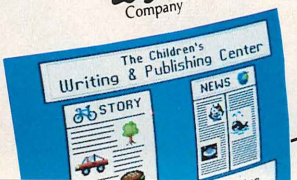
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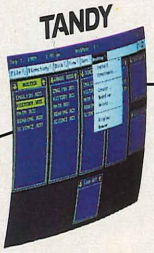
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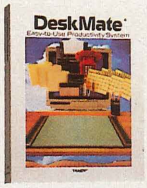
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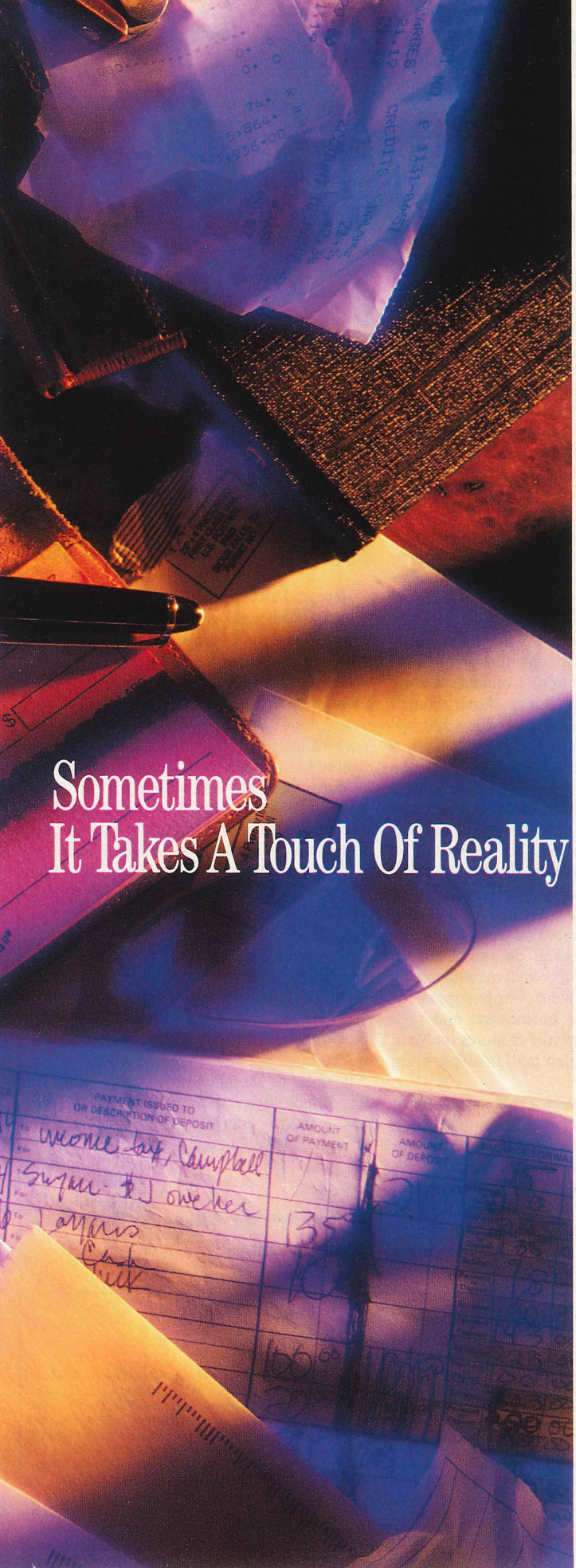
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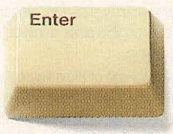
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CIRCLE READER SERVICE 49

EDITOR'S NOTE

Freedom of Choice— A Growing Franchise

Several times a year, tens of thousands of people gather to exhibit and explore the newest technology and the most provocative ideas in computers and electronics. Traditionally, Comdex has been the premier computer convention and was the exclusive territory of business computing. In contrast, the Consumer Electronics Show (CES), like the name says, has focused on broader-based, mass-market electronics. Until recently, the boundaries between the two seemed clear—and impenetrable.

However, as operating systems became more standardized, and the human imagination more fertile, millions of consumers began using computers for business purposes, often within their own homes. And the walls between the two worlds—powerful computers and consumer electronics—began to crumble. So here I am at Comdex, writing this editor's note in a Chicago hotel room. I am here not only to see new products and talk to people, but to chair, for the first time, a Comdex panel on the home office.

In preparation for the session, I've done a lot of thinking about boundaries and about locations, and about people's initial difficulty accepting that they are fluid. Most of us are accustomed to working in what we think of as traditional offices—we tend to think that people always have and always will. But we all know, of course, that the generations that preceded us worked on farms and in factories, growing food and manufacturing products. Others were shopkeepers or worked in storefront businesses, and they often moved from that row of stores on Main Street to the newfangled mall in a sprawling suburb.

Even corporate America is breaking out of its molds. My first job in publishing was in a Manhattan skyscraper, but the company has since relocated to the suburbs. And HOME-OFFICE COMPUTING's parent company, Scholastic Inc., based in a midtown tower when I joined the company, is now in Greenwich Village, where our magazine occupies an informal loft space.



Here at the magazine, we are increasingly flexible about who works where and when. Some of us do put in the conventional 9-to-5 shift, but others arrive at 10 or 11, or even work from home. You all know about telecommuting editor Nick Sullivan (*see Workstyles, page 104*), who shows up at the New York office every now and then but spends most of his very productive working hours in his converted Massachusetts barn.

What's interesting is not the odd case here and there of home-based workers or entrepreneurs. What's interesting is the new flexibility with which more of us choose to work and the ability of society and businesses to adapt to the broadening definition of the workplace.

The cover story on home-based franchises (*see page 41*) shows that the changing face of the business community is reflected in franchises as well—they are shifting from storefront to homefront, as well as from products to services.

It looks as though by mastering more of the technology available to us today, we all have a greater franchise to choose the way we want to live and work.

Claudia Cohl

CLAUDIA COHL
EDITOR-IN-CHIEF

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CIRCLE READER SERVICE 57

QUALITY IS JOB ONE

I like your magazine. Your articles are practical and reassuring to the person who has to tackle his markets alone and, typically, on a limited budget.

I was surprised, therefore, to find Henry Beechhold (*"Buyer's Guide to 286 Computers," March 1989, page 39*) reviewing some very expensive AT compatibles. Some of us may be able to afford those prices, but most people who read your magazine are undoubtedly going to be looking at much cheaper systems. Many AT compatibles are selling at $2000 or less with a 1.2MB floppy, EGA monitor, and 20MB hard disk.

There is little need for VGA graphics in ordinary business applications. It is becoming a standard, but in the corporate world and its media, not in more private business. Even CGA is quite enough for most people if they want color at all. A 40MB hard disk is nice but probably unnecessary for most home businesses.

Beechhold can continue his approach, but it would be more honestly labeled as a set of recommendations for the well-heeled reader. There is no reason why we shouldn't know about Cadillacs and Rolls Royces, but most of us will probably shop for Fords.

STEVE KOKE
Rough and Ready, California

MAIL CALL

"Mailing-List Mechanics" (*March 1989, page 52*) mentions an annual registration fee of $60 for a bulk-mail permit. However, there is also a one-time fee of $50 to obtain the permit.

Also, "Five Tips on Mailing-List Management" (*March 1989, page 52*) comments that address corrections will cost you 30 cents each if forwardable and nothing if not. This is incorrect: The charge is 30 cents per piece whether or not an address correction is available.

RAY MERRIAM
THE MERRIAM PRESS
Bennington, Vermont

EDITOR'S NOTE: *According to the U.S. Postal Service in New York, there are two types of bulk-rate permits. The one discussed in the article is the $60 rate for the permit itself, without an additional postal fee. There is a renewal charge of $60 a year, but the permit price covers the first year. This rate applies to permit-seekers who intend to use their own postage meter. The additional $50 you mention is probably the fee for the postal bulk-mail permit indicia imprint on your envelopes. (The post office told us the fee is $60.) The Postal Service also confirmed our statement that you are charged for an address correction only when a new address is available.*

REVIEW REVIEWS

I've been reading HOME-OFFICE COMPUTING for several months and have just recently become a subscriber. I have been designing both hardware and software for computers and embedded-processor systems for some 12 years, five of these on a contract basis as a member of a consulting firm, and four as an independent contractor. I have been working out of a home-based office for the past two years. While I don't need help figuring out computers, HOME-OFFICE COMPUTING keeps me informed on home-office issues.

As far as product reviews go, I would say watch out for the trap that seems to catch every computer magazine on the racks. In an attempt to get more products reviewed, it seems that everyone resorts to trimming the time spent reviewing each product. If you own one of these products, you get the impression that the reviewer hasn't looked into things very carefully.

GARY CORDELLI
MENTOR COMPUTER CONSULTING
Sanford, Maine

Greetings from a generally pleased subscriber. The focus shift over the past few months has been welcome and helpful.

One suggestion, however. Without becoming a *tech-nerd* publication, I think you can study your subject matter a bit more closely. In "How to Get Free Software" (*March, Up Front, page 12*), the line "You can add [various programs] to your library for no cost, or the cost of a floppy disk and stamp" is misleading. In my experience, most sources charge $4 to $6 per disk, and most of what you get is shareware—a remarkable bargain. *PC-File* for $59.95 is a tad cheaper than *dBase* for $495, and it is more than sufficient for many home-office applications.

On the whole, I'd say the technical accuracy of your magazine has increased over the past year. And the readability and focus are excellent—please keep growing!

JOHN PFLUG
Charlotte, North Carolina

HOME-OFFICE COMPUTING *looks forward to letters from all readers. Please direct correspondence to Letters to the Editor,* HOME-OFFICE COMPUTING, *730 Broadway, New York, NY 10003. Include name, address, and telephone number. Letters become the property of* HOME-OFFICE COMPUTING *and may be edited for length and clarity.* ■

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CIRCLE READER SERVICE 47

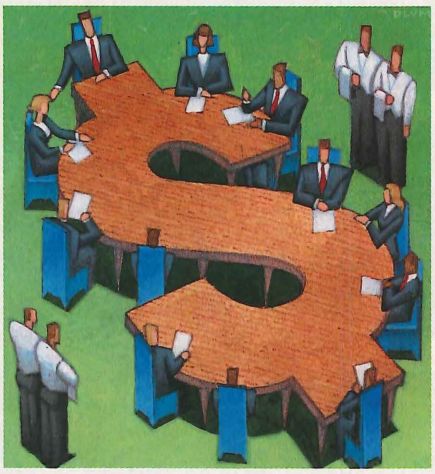
EDITED BY BRIANNA POLITZER

Get Backing at Venture Capital Clubs

Looking for big money to turn your dream venture into reality? You're not alone. Venture capital (V.C.) clubs are brimming with new entrepreneurs, investors, and service providers—such as attorneys, accountants, and marketing consultants—who can make hoeing the row a lot easier.

Although V.C. clubs don't have money of their own to invest, they can put you in touch with those who do. They educate members on securing venture capital and provide opportunities for entrepreneurs to meet. Many of these clubs are affiliated with community economic-development agencies and venture funds. Some clubs are connected with research universities.

Pioneered in 1974, there are now more than 100 V.C. clubs around the globe, and the reason for the spread is not surprising: Many entrepreneurs and inventors are woefully naive about making connections, raising money, and structuring deals.



Recent S.B.A. surveys show that private investors would invest a great deal more if they could find good deals. Managers of venture-capital funds (which only invest their millions in companies that can guarantee a high return) say that few of the business plans that cross their desks meet their investment criteria.

Clubs bring the investor and entrepreneur together and let them do their own matchmaking. Service providers often act as go-betweens. The Connecticut Venture Group in Norwalk holds breakfast and lunch meetings with speakers and Five-Minute Forums in which members stand up, pitch their companies, and explain what they are looking for. Other clubs hold similar meetings. There are no hard-and-fast rules, but they all have time for networking before and after meetings.

Most clubs provide newsletters, membership rosters, and seminar admission for an annual membership fee. The Sacramento Valley Venture Capital Forum in Sacramento, California, for example, offers annual memberships to individuals for $80, corporate sponsors for $500, and students for $25. These fees include admission to a monthly cocktail hour; nonmembers pay $15 at the door.

To find a V.C. club in your area, look for monthly meetings advertised in the business calendar of metropolitan newspapers. Or write to the International Venture Capital Institute, Inc., which publishes a directory of over 100 clubs and includes overseas listings. For a copy of the Spring 1989 *International Directory of Venture Capital Clubs*, send $9.95 to I.V.C.I., P.O. Box 1333, Stamford, CT 06904, or call (203) 323-3143.

—LIS FLEMING

ILLUSTRATION BY DARRYL LIGASAN

Fax Mania Yields Fax Food

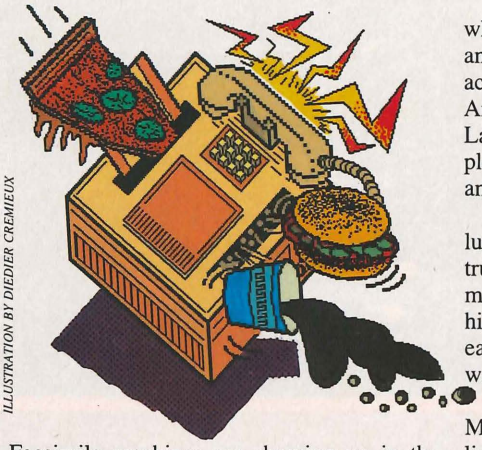


ILLUSTRATION BY DIEDIER CREMIEUX

Facsimile machines are showing up in the strangest places these days. Even businesses that don't rely on "rapid transit" communications are acquiring fax machines for a new marketing angle or just to avoid appearing behind the times.

Case in point: New York City's Second Avenue Kosher Deli, whose television ad (sponsored by Murata) boasting a fax machine and slogan, "Pastrami on Fax," has given new meaning to the term fast food.

The deli's Murata F-30 fax machine, which is used to send menus to customers and receive orders, has helped boost sales, according to assistant manager Steve Cohen. And unlike telephone calls, adds host Alan Lang, fax orders don't interrupt busy employees. They can simply read the requests and fill them in the order received.

The fax frenzy is spreading beyond city lunch counters. Other businesses are now trumpeting fax numbers in copycat advertisements, and not for mere marketing flash or high-tech one-upmanship. The machines are easy to use, and for many, they provide a welcome solution to vexing problems.

Some hospitals, such as Indianapolis Methodist, now use fax machines to obtain lists of potential organ recipients. And police departments, for example, the County Sheriff Department in Santa Cruz, California, and the police department in Carmel, Indiana, exchange faxes of criminal histories, arrest information, and search warrants with other precincts in the area. Even the broadcast business has caught the wave: New York City's WNEW radio station accepts requests over the fax machine.

Now that the fax machine is hitting the streets (as well as the delis), can your business afford to be without one? After all, in these fast times, who's got time to wait in line for lunch?

—EDWARD R. ALLEN

BRIANNA POLITZER *is the researcher at* HOME-OFFICE COMPUTING.

MS-DOS vs. Macintosh: The Clamor for the Spotlight

It's Coke against Pepsi; McDonald's versus Burger King; the Hatfields against the McCoys; and in the computer industry, it's the MS-DOS standard versus the Macintosh. Although MS-DOS is still in the lead, the Mac is coming up fast—it's by far the fastest-growing sector in the software market. Here's the score for 1988 software sales, as reported by the Software Publishers Association.

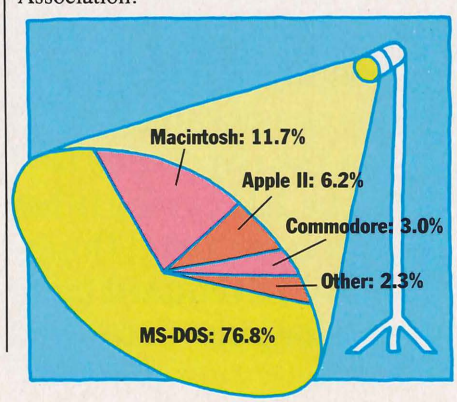


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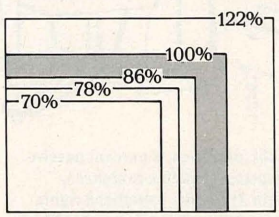


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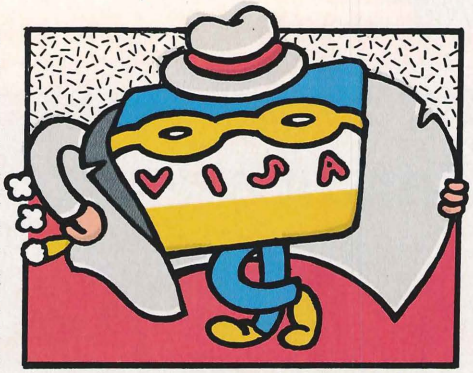
CIRCLE READER SERVICE 35

Tips for Preventing Customer Credit-Card Fraud

ILLUSTRATION BY HOLLY KOWITT

U.S. merchants and credit-card companies lose more than $6 billion every year because of illegal credit-card charges, says Pearl Sax, codirector of the Fraud and Theft Information Bureau, a private company that helps merchants prevent credit-card fraud. Since you can't see the card or the customer that calls in a phone order, you have no choice but to trust the voice at the other end of the line or the signature on the order form. But an invalid account number or expired card can mean a costly chargeback from the bank months later, perhaps long after the order is filled. Fortunately, you can prevent most chargebacks by taking the proper precautions. Here are some guidelines:

- Always call for authorization, no matter how small the charge. This will prevent most chargebacks from expired cards or accounts with balances over their limits.
- When taking a telephone order, repeat the credit-card number and expiration date to your customer for verification. Be sure to ask for home and work telephone numbers in case problems arise.



- One way to detect a stolen Visa or MasterCard number is to ask for the name of the issuing bank. If the caller hesitates too long or doesn't know, accept the order, but do not fill it until you call the issuing bank.
- Be sure to get the name of the person placing the order exactly as it appears on the card. Never accept an order from anyone using another person's card.
- Ship merchandise only to street addresses. Because post-office boxes are hard to trace to owners, they are often used by people ordering products with stolen card numbers. Also, delivery services such as the United Parcel Service may require street addresses.

For more information about credit-card fraud, write the Fraud and Theft Information Bureau (217 N. Seacrest Blvd., Box 400, Boynton Beach, FL 33425) or call the company at (407) 737-7500. The bureau publishes a catalog, *Credit Card and Check Fraud Self-Defense* ($1 for postage and handling), listing helpful publications and directories.

—HOWARD BERENBON

Want to Start a Business? Do Your Homework

If you dream of transforming your hobby or skill into a successful home-based business but don't know where to begin, try going back to school. Many colleges and universities throughout the country are now offering extension courses to would-be entrepreneurs.

"Many new businesses fail because the owners lack managerial and technical skills," says Robert Rachlin, director of the Center for Business Studies, University of Continuing Education, at Hofstra University in Hempstead, New York. "They don't know how to start or market a business, and very often they are surprised by the tremendous amount of work and capital needed to finance it during the growing stages."

Hofstra University offers a series of small-business and entrepreneurship courses at its University College of Continuing Education, including courses on financing, management, pricing products and services, structuring a business, marketing a product, and advertising and promotion.

Likewise, University of California's Berkeley Extension offers two classes on practical business and legal tools needed to start or expand a small business: "Essentials of Small Business Management" and "Strategic Planning for Small Business." Some of the topics covered include negotiating commercial leases, cash-flow budgeting, accounting, and acquisition of capital.

The focus in Berkeley's program is on practice rather than theory. Participants learn from fellow class members and case studies, then plan and develop their own business ideas, says Rachel Clark, director of student advisory services at U.C. Berkeley Extension.

Not everyone is taking classes as a prerequisite to getting started. Many are simply taking a crash course in business nuts and bolts. "Some students are already running businesses," says Clark. "They come here to learn how to do it better or to learn solutions to problems they hadn't anticipated."

Many other colleges and universities have caught on and are offering courses in entrepreneurship. For more information, contact your local college or university extension program.

—LAUREN LONG



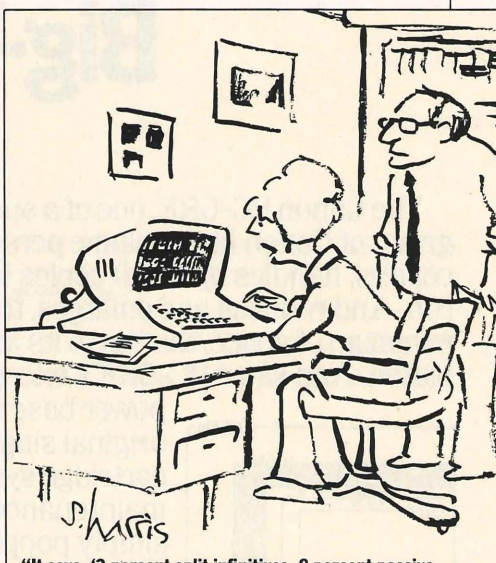
Students learn small-business basics in UC Berkeley's extension program.



What Electronic Device is Most Widely Used in Home Offices?

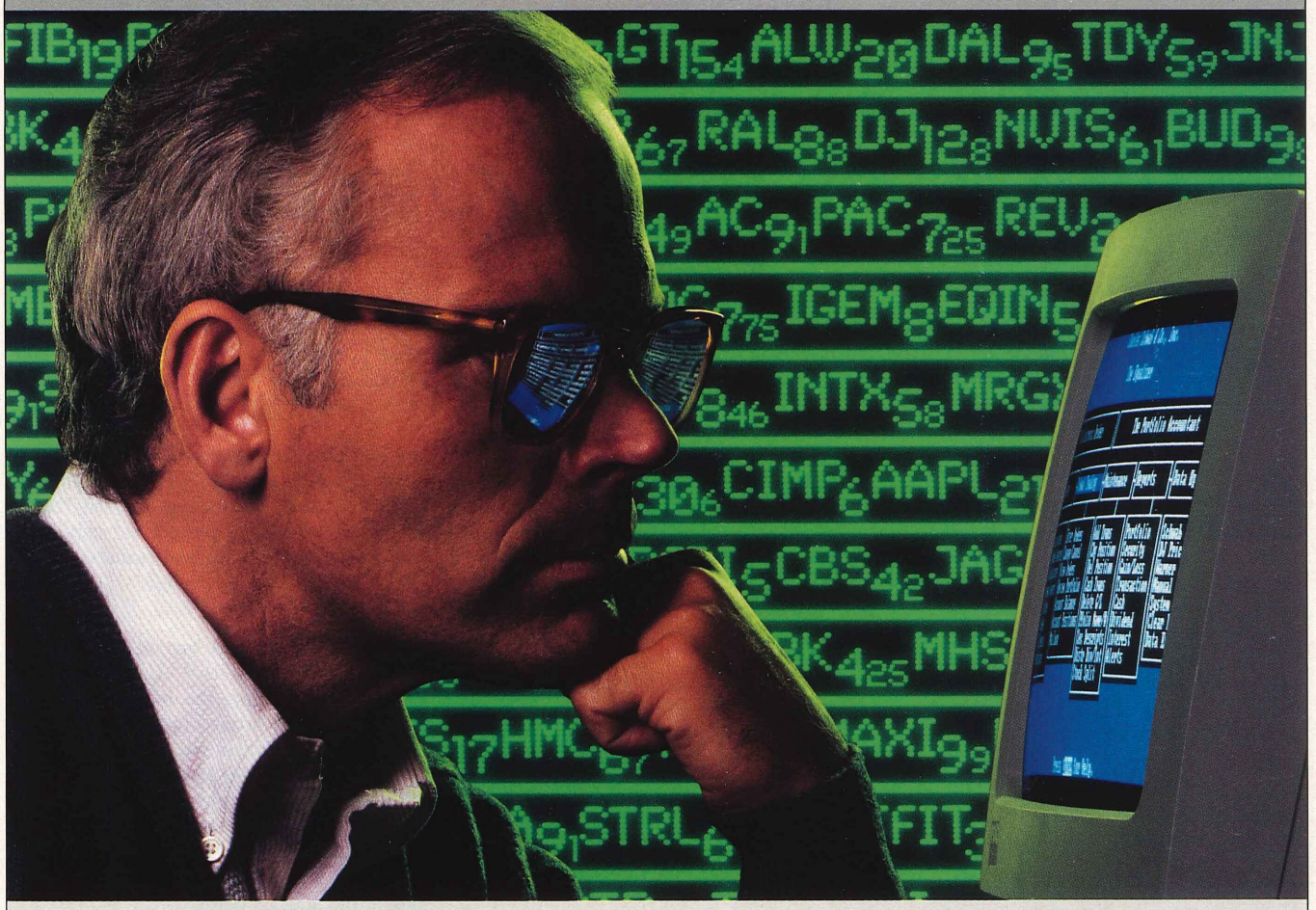
DRAWING BY S. HARRIS

The calculator. It's an essential tool in more than 70 percent of home offices, says Ray Boggs, industry analyst for CAP International, a market-research firm in Norwell, Massachusetts.



"It says, '3 percent split infinitives, 8 percent passive verbs, 16 percent compound-complex sentences, average sentence length 26 words, paperback rights $3.2 million, movie sales $8.3 million, total take $11.5 million, less 15 percent agent's fees.' "—Sidney Harris

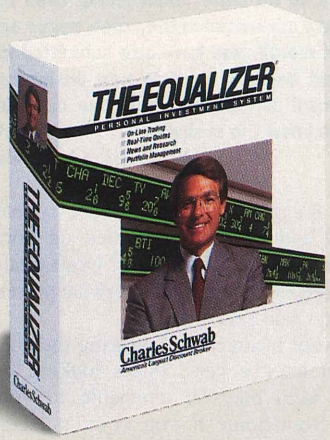
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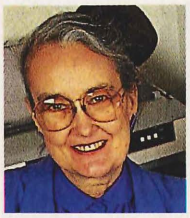
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CIRCLE READER SERVICE 56

Getting a Home-Based Travel Agency off the Ground

BY JOANNE PRATT



It's a lot quicker to make a phone call than to write a letter when you need to order supplies, contact clients, or get information. A long-distance call may even cost less than a letter, if you compare the telephone charge with the combined costs of labor, stationery, printing, and a stamp. Another advantage is that you get more feedback during a phone conversation. Moreover, you get an answer immediately—while you still remember exactly what you asked. And for some people who work alone, socializing, even with strangers, makes welcome breaks in the day. So don't hesitate to pick up the telephone and dial if you don't have to write—you'll probably get a faster and more complete response.

Q. I recently moved from Santa Fe to Albuquerque because of my husband's business. I was a travel agent in Santa Fe, and now I'd like to open my own travel agency at home. Can you tell me what is involved? RUTH COWEN
Albuquerque, New Mexico

A. It's not easy, but it is becoming more common to open travel agencies in the home. Because agents are entrusted with blank tickets for air travel, they must meet stringent standards to gain approval—including a minimum $20,000 bond or letter of credit; at least two years' full-time experience in travel services; and the "requisite licenses of the jurisdiction in which [the agency] is located." In other words, a travel business must be permitted under local zoning codes.

You must include a photograph of your office with the application; this cannot be a business you just set up on the dining-room table. Send $81 (nonrefundable) for the A.R.C. application kit to Airlines Reporting Corporation, P.O. Box 96194, Washington, DC 20090-6194; (202) 626-8000. Ask for the free "General Information and Requirements Summary" before you order.

The cost to get access to an on-line reservation system, such as American Airlines's SABRE, varies; you must negotiate it with each airline. The fee depends on the number of airlines flying into your city, the volume of your bookings, and number of terminals you have in your office—in short, how much business you will generate.

Most travel agencies lease their computer systems and reservations services. You will need a computer with a modem and will probably be happier with two printers to avoid constant changing from ticket stock to letterhead. Remember to budget the costs of installing several voice telephone lines and a dedicated line for your computer. You won't need a WATS line because most of the hotels, car-rental agencies, and other places you'll call for reservations have toll-free numbers.

Another option is to work for an agency as an outside salesperson specializing, perhaps, in corporate-travel planning. Then you could make bookings with Commercial SABRE at a much lower cost, and your sponsoring travel agency would issue tickets. If you decide to take this route, find a compatible travel agency in Albuquerque and negotiate a fair commission (50/50 is typical).

Q. About a year ago I retired from my job as a full-time bookkeeper at a local community-college bookstore. Prior to my retirement, I purchased an IBM XT computer, a letter-quality printer, and the *BPI Accounting* package. I also have *WordPerfect* 5.0 and *VP-Planner* Plus. I am now keeping books for just two small businesses and I want to do more bookkeeping from my home. I have advertised in the yellow pages and by word of mouth, and have also submitted my resumé and business card to new businesses listed in local newspapers. How else can I let businesses know I'm available? P.L. SUTEU
Roseville, California

A. First, I suggest that you order typeset letterhead and envelopes, printed on bond paper, for your correspondence. Draft-quality paper detracted from the otherwise professional letter you sent me.

Build your business by checking the classifieds for bookkeepers. Firms looking for part-time help may be amenable to your working from home if you point out cost savings for them. Have you introduced yourself to local bookstores as an expert in their business?

Joining civic organizations, such as the chamber of commerce or networking groups, will introduce you to businesspeople who may need your services. To find groups in your community, watch for notices in the business section of your newspaper or call the public library. And if you haven't already done so, ask each of your clients for referrals.

Q. I am interested in establishing an import-export business and would like to hear from anyone who has one. I have worked for an international company, but am not quite sure how to start and grow my own business.
JAMES SARNOWSKI
Erie, Pennsylvania

A. Let me recommend *Import Export Can Make You Rich*, by L.B. Lanze ($19.95; Prentice Hall, 1988), the book I gave my nephew when he arrived home from Guatemala with 1,000 ornaments to sell two weeks before Christmas. The book explains, in detail, how to buy products abroad and get them through customs and how and when to properly market them. Readers, if you have any suggestions, please send them to ShopTalk at the address below.

BUSINESS OPPORTUNITIES

If you have personnel skills and perseverance, you might find a niche brokering homeworkers. *Telecommuting Review* has pointed out the need for someone to match clients looking for help with people who can work productively in their homes. Look for companies that need help with tasks such as telemarketing, word processing, and programming. To get started, interview local companies, especially those with which you now do business.

CORRECTION

The toll-free number given for the Farmers' Software Association in the February 1989 ShopTalk column cannot be reached from within Colorado. Colorado residents can call (303) 222-0320 or write: Farmers' Software Association, P.O. Box 660, Fort Collins, CO 80522.■

SEND US YOUR HOME-OFFICE QUESTIONS

Send your questions on taxes, legal issues, developing a business plan, capitalizing, marketing and public relations, or any other business-related issues to Joanne H. Pratt, c/o ShopTalk, HOME-OFFICE COMPUTING, *730 Broadway, New York, NY 10003. Name, address, and telephone number must be included on all correspondence. Pratt is a nationally known researcher, consultant, and speaker on the subject of home business.*



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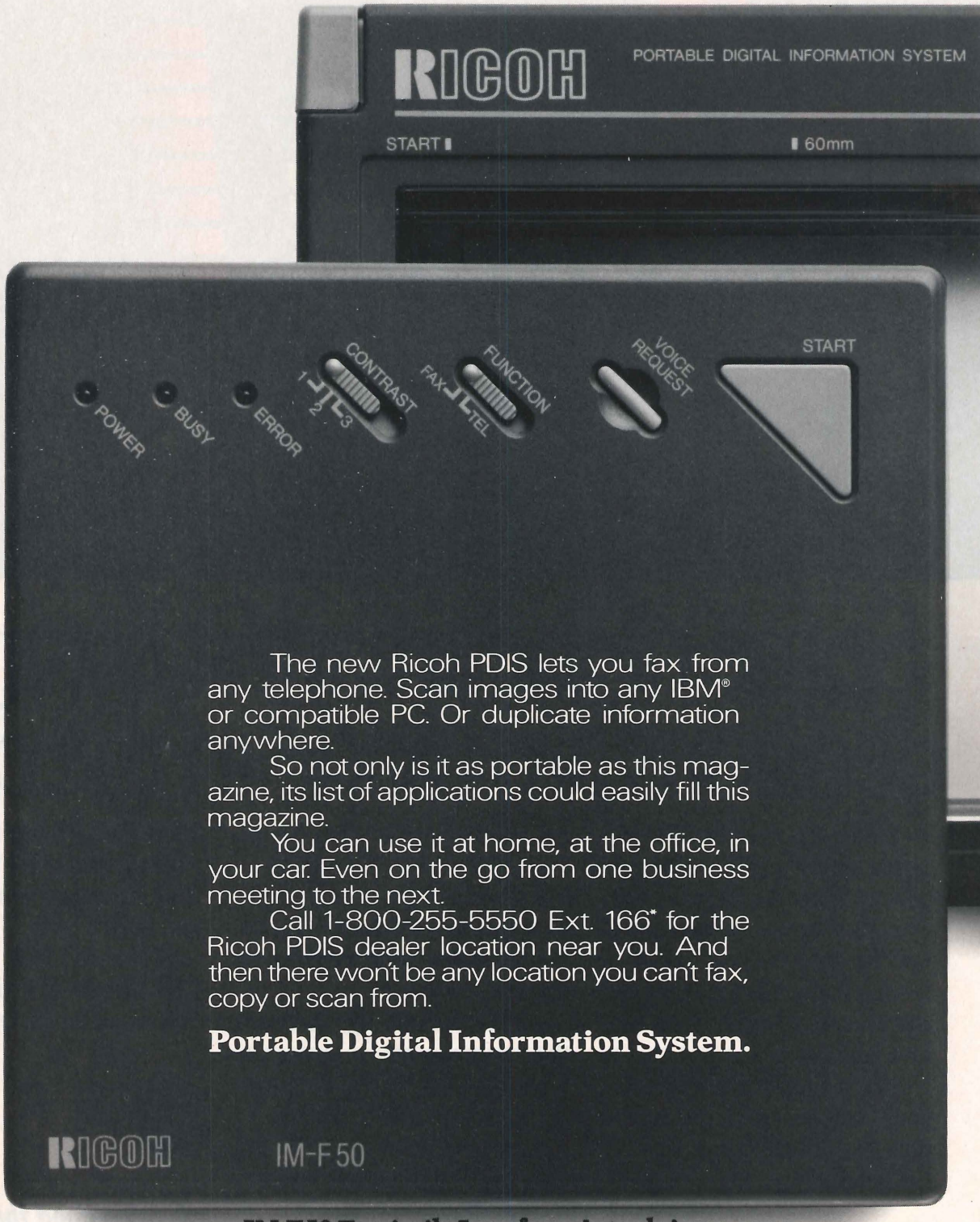
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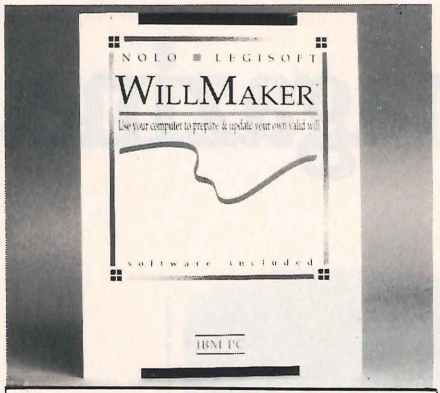
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CIRCLE READER SERVICE 55

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CIRCLE READER SERVICE 51



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CLINIC

Mass-Storage and Graphics Questions

EDITED BY JEFF DONAHUE

SQUEEZING MORE INTO YOUR APPLE IIGS

Q. Is there a way to connect a Bernoulli Box to an Apple IIGS? Perhaps through the SCSI interface port?

FELIBERTO ESCOBAR III
San Antonio, Texas

A. At this time, there is no way to use the Bernoulli Box (Iomega, 1821 West, 4000 South, Roy, UT 84067; [801] 778-1000) mass-storage system with any Apple II machine. Iomega produces only IBM-compatible and Macintosh models of the Bernoulli Box. The Macintosh version of the Box connects via an SCSI port identical to the one on the IIGS, but there are no Apple II software drivers available to make the Box function correctly.

There are other mass-storage devices available for your computer, albeit, they do not have the same potential capacity as the Box. Rodime Systems (851 Broken Sound Pkwy., Boca Raton, FL 33487; [407] 994-5585) offers external hard-disk drives ranging from 20 to 140MB ($799–$2,199) for the Apple IIe and IIGS. First Class Peripherals (3579 Hwy. 50 East, Carson City, NV 89701; [800] 982-3232) sells a 60MB tape-storage system ($895) and several different hard-disk drives are available.

TANDY TECHNICAL DIFFICULTIES

Q. I am looking for a hard-disk drive for my Tandy 1000 SX, and I've been told that I must use a Tandy drive. Is this true? If not, can you please recommend an internal drive?

DANIEL SAVARD
Bowmanville, Ontario, Canada

A. The Tandy 1000 SX is not limited to Tandy drives. When Tandy was manufacturing the 1000 SX, the company recommended that owners use a hard card for mass storage. However, most hard-disk drives, such as the standard 40MB from Seagate Technology (920 Disc Dr., Scotts Valley, CA 95066; [408] 438-6550), should work with your system.

AMSTRAD ANSWERS

Q. I would like to keep both of my 5.25-inch disk drives on my Amstrad 1640 PC and integrate a 20MB or 40MB hard-disk drive. Your November Clinic column mentioned a problem with the PC 1512, and I would like to know if I should obtain a hard card or whether I can install a normal hard drive without affecting the performance of my floppy drives or my computer? Also, is the 1640 PC compatible with external drives?

ANDRES FERNANDEZ
Vancouver, Washington

A. The Amstrad PC 1640 does not overheat like the 1512. Therefore, you can install an average hard-disk drive (*check the question above for a suggestion*) with no foreseeable difficulties. Although Amstrad does not offer any external drives of its own, the 1640 PC should be compatible with third-party external drives.

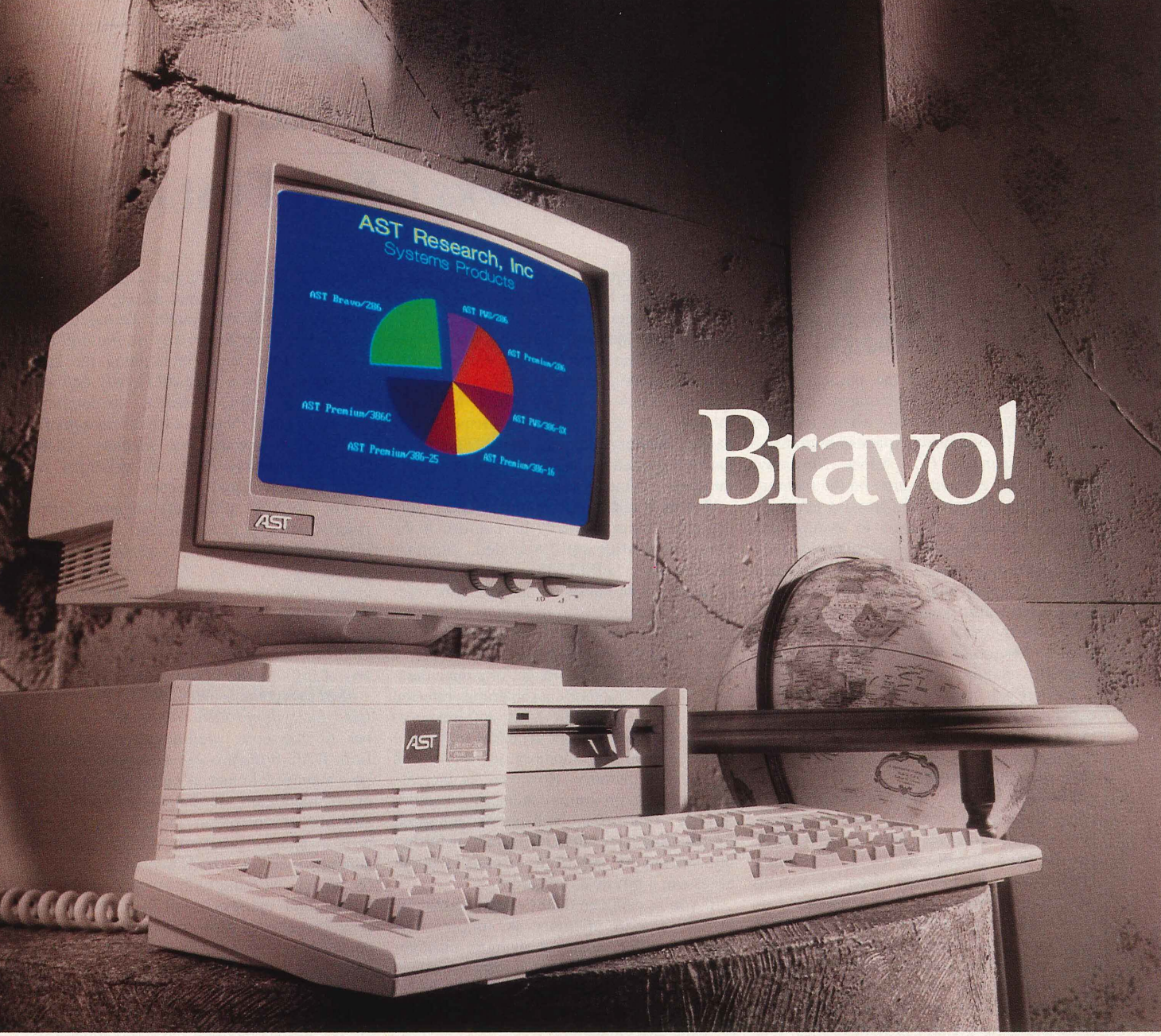
GRAPHICS QUANDARY

Q. I recently bought an IBM PS/2 Model 25 with multicolor graphics array (MCGA) graphics. I am very confused. Can I run enhanced graphics adapter (EGA) software on my machine?

VINH LAM
Seattle, Washington

A. Yes and no. All color IBM computers will run Color Graphics Adapter (CGA) software. Both MCGA and EGA add enhanced modes—more color and better resolution—to the basic CGA standard. However, MCGA's enhanced modes are not compatible with EGA's. This means that software that requires EGA will not run on your Model 25. On the other hand, many programs will run under both CGA and EGA; they just look better under EGA. Read the package to find out whether EGA is required, recommended, or optional.

If you have technical questions or computer ailments that need diagnosis, our technical staff will try to help. Although we cannot answer each letter personally, this column will deal with frequently asked questions and common problems. We reserve the right to edit letters for length and clarity. Please include your name, address, and phone number with all correspondence. Send your letters to Clinic, HOME-OFFICE COMPUTING, *730 Broadway, New York, NY 10003.* ■



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Times Have Changed.

CIRCLE READER SERVICE 30

MS-DOS Memory Clarified

Color Mac Plus • *AppleWorks GS*: A First Look

IBM / MS-DOS

BY HENRY F. BEECHHOLD & STEVE MORGENSTERN

For months, I put off the purchase of a memory card for my AT compatible, but I finally gave in the other day when I received a program that requires expanded memory—Adobe *Illustrator PC*. Adobe *Illustrator* won't trigger a buying surge on the memory market, but it points to the growing tendency among software publishers to assume that most of their customers have expanded memory. Hard-disk drives followed the same path. The notion that a program would require a hard disk would have been unthinkable even two years ago. Today, many programs—Microsoft *Windows* and *Excel*, for example—require a hard disk-drive.

Even if you aren't muscled into getting it, expanded memory can dramatically improve the performance of most systems. There are a few potential areas of confusion, though, so let's cover them briefly.

Extended Memory. Most off-the-shelf AT compatibles come with a megabyte of memory installed. However, only the first 640K can be used directly by DOS. The other 384K is extended memory. What can you do with extended memory? A few things.

You can create a RAM disk in extended memory. (Your version of DOS undoubtedly came with utility software that lets you do so.) A RAM disk works just like a regular disk drive: It has a letter designation, and you can use it to read from and write to files. The difference is that this drive exists only in memory—turn off the computer and the information in a RAM disk is gone, unless you've taken the trouble to copy it to a floppy or hard disk.

The advantage of using a RAM disk is speed. The computer can access information stored in a RAM disk instantly, without waiting for a physical drive to read a disk.

Rather than a RAM disk, though, I'd recommend a RAM disk cache. A disk cache is an area of memory set aside to hold a copy of the information from your disk drive. Once your data is copied to the disk cache, information is retrieved from RAM instead of the drive, saving lots of time. When you need to write information to a file, though, it is stored on disk—not just in volatile memory, as it would be in a RAM-disk setup. All in all, you get the advantages of a RAM disk without the dangers. There are several good disk-cache utility programs, including *Super PC-Kwik* from Multisoft and *Lightning* from Personal Computer Support Group.

Expanded Memory. If you already have some extra memory on your motherboard, you can make good use of it, as explained above. When you *buy* more memory, though, you want expanded memory. Expanded memory lets you "break" the 640K barrier imposed by DOS and load more data into your computer's memory.

Out on a LIM. You should consider only expanded memory boards that conform to the Lotus-Intel-Microsoft/Expanded Memory Specification (LIM/EMS) 4.0. This standardized set of hardware and software rules allows programmers to use many megabytes of expanded memory. That data can take many forms—an enormous spreadsheet, a scanned photographic image, or a huge database file. This memory is sometimes referred to as EMS, or even LIM 4.0 memory.

Note that you can set up RAM disks or a RAM cache in EMS memory, just as you can in extended memory. However, an increasing number of programs can use this memory directly. That means both power and speed for handling larger data files and transferring information to and from memory without accessing a physical disk drive.

If you're using an 80386-based computer, installing more memory is simple. The 80386 features advanced memory-management capabilities that let you install memory either on the motherboard or on expansion boards and allocate portions of it to extended or expanded memory. —S.M.

PCs and Macs: Worlds Apart? Desktop publishing and network systems are pushing the IBM PC and Mac worlds closer together. The real issue is no longer what computer you're using, but what software and hardware you can link efficiently to get the job done. For example, IBM has announced the networkable PostScript-compatible IBM Personal Page Printer II with parallel, serial, and AppleTalk communications ports ($4,999).

Macros Made Easy. Does your computer work require a lot of repetitive typing? How would you like to recall an entire contract or letter with a single keystroke? How about storing tedious, frequently used key combinations? Mextel's AutoKey 20/20 ($289) is a supplementary 21-key keyboard that sits just above the top row of keys on your IBM-compatible keyboard and can remember 8,000 keystrokes. Installation requires nothing more than plugging your keyboard cable into 20/20 and plugging the 20/20 cable into your computer. When not active, the device is transparent to the system. To use it, you merely press the Select key on the unit and then press the key(s) containing the keystroke macros you have previously defined. There is no software, hence, no computer memory is used. The unit has its own microprocessor, firmware, and memory. Blank flip-down overlay cards are provided for keeping track of your macros.

The 20/20's nonvolatile memory keeps macros alive even when the computer is turned off, but they can be replaced by reprogramming the keys. Once you've "macroed" with AutoKey 20/20, you'll look at software macros with disdain; neither add-on nor built-in macro utilities can compare with 20/20 for ease of use and convenience. It's one of my favorite PC enhancements.

Hold Everything!—Well, Almost Everything. *Hold Everything!* ($99.95)—one of a number of low-cost, well-designed programs from DAC Software—is a specialized database manager. In fact, it's a very smart memory-resident card file that can be popped up any time. (If you prefer, though, you can run it as a separate program, like any standard database manager.) *Hold Everything!* is ideal for anyone working with several clients, referrals, club members, and so on, because it provides separate card stacks within the same database for personal entries and business entries. It will date-stamp entries, search on phonetic as well as conventional alphabetic keys, and produce customized reports. The query function includes basic relational tests (greater than, less than). A 16-line memo can be added to any or all cards in your database. Although this isn't the only program of its type, it's a real winner.

A Real Bonus. *DacEasy Word* ($69.95) is for anyone in need of an inexpensive word processor that has just enough features to tackle your day-to-day writing jobs without strain. It uses optional pull-down menus (*Framework* style), allows you to keep four windows open simultaneously, and comes with a dictionary and spelling-checker—a real bonus at the modest price. —H.B.

HENRY F. BEECHHOLD *is the author of* The Brady Guide to Microcomputer Troubleshooting & Maintenance *(Brady Books, Prentice Hall Press, New York).*

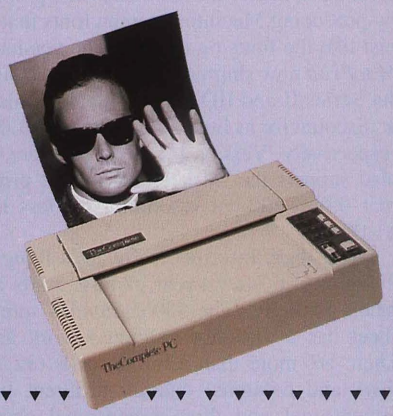
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CIRCLE READER SERVICE 36

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MACINTOSH

BY JIRI WEISS, JR.

Yet another company has come out with a high-capacity floppy-disk drive that may make you think twice before buying a hard disk. Peripheral Land's TurboFloppy ($499) packs 1.4MB on an ordinary 3.5-inch floppy disk. The drive will read and write to 720K and 1.4MB IBM floppies, so you can also use it to exchange information with IBM PCs. But it won't read or write on floppies that you are using with your 800K Mac drives. TurboFloppy is compatible with all Macs from the 512Ke up.

New Insight. Insight Development of Moraga, California, is offering software that promises to give Mac users access to widely available and relatively inexpensive Hewlett-Packard-compatible laser and ink-jet printers. *MacPrint* ($149) translates a Mac's *QuickDraw* imaging language into the printer language that the HP can understand. According to Insight, one of the problems of using non-Macintosh printers has been that the on-screen fonts differ from the printed versions. An HP Courier is not the same as a Macintosh Courier, for example. This has made it impossible to preview text before printing it. *MacPrint* eliminates this problem by producing Macintosh screen fonts that are just like the fonts on the HP. The version of *MacPrint* now shipping supports HP's LaserJet Series II and IID laser printers, available at discount for as little as $1,800 and $3,000, respectively. Version 1.1 of the software will also support the DeskJet, an ink-jet printer that offers 300-dpi resolution for less than $1,000.

Flying High. Informix Software's *Wingz* is flying at last, after a year of false starts and much publicity. The $395 graphics spreadsheet has a virtually unlimited work area: There are more than a billion cells (32,768 rows and columns) and 20 different two-dimensional and three-dimensional charts. The user has access to a full-blown programming language called HyperScript and can control such things as the font size and style characteristics of each cell. "The new spreadsheet has muscle in its macro capabilities," says one home-based software consultant who was a *Wingz* beta-tester, "and it adds a lot of potential for people who want to do presentations."

Reducing Eyestrain. If you are tired of looking at the Mac's small monitor all day, here is some good news. In response to the new, larger Apple monitors (*see last month's column*), Radius has dropped the prices of its monitors. Both the SE/Plus and Mac II versions of the Radius Full Page Display now sell for $1,490. The Two Page Display, originally $2,390, now lists for $1,495. There are two new low-price entries in the large-monitor market from Cornerstone Technology of San Jose, California. Cornerstone's SinglePage monitor with an 82-dpi resolution sells for $999; its DualPage, 83 dpi, sells for $1,698. Both monitors come with a one-year warranty.

Color Mac Plus. Aura Systems of Carlsbad, California, is out with a device slightly larger than an external hard-disk drive that adds color capability to the Mac 512Ke, Plus, and SE. Like the $695 ColorVue SE system from Orchid Technology, which works only with the SE, Aura's ScuzzyGraph II takes advantage of the unused color capability of the Mac's *QuickDraw* image model. But don't expect to see the dazzling array of colors you see on the Mac II. *QuickDraw* limits users to only eight colors at a time. Still, Aura claims that eight colors (out of the available 16) are good enough for most desktop-publishing applications. ScuzzyGraph II comes in two models: a $1,295 version that works with any color monitor with a resolution up to 720 by 512 pixels; and one for $2,495 that works with large color monitors up to 1,280 by 1,024 pixels. The company justifies its steep prices by pointing out that its hardware contains a Texas Instruments graphics chip and a microprocessor that does all the *QuickDraw* processing for the Mac so that drawing large screens doesn't slow you down.

JIRI WEISS, JR. *is a freelance writer based in Berkeley, California, and can be reached at MCI mailbox* JWEISS.

APPLE II

BY CHARLES H. GAJEWAY

I finally got my GS out of the shop, freshly upgraded and ready to run the new operating system, GS/OS, and *AppleWorks GS* (*AWGS*). Eagerly, I got out the *AWGS* manual, inserted the disks, and dove into the long-awaited program. A couple of long and sometimes frustrating evenings later, I have this preliminary report: There is good news and bad news.

Good News. The good news is that working with GS/OS is pleasant; it provides a Mac-like Finder environment that is much faster and more reliable than the old GS Launcher. I haven't gone too far below the surface of the new operating system, but my normal chores haven't made it necessary.

More good news is that *AWGS* offers some real, useful, and enjoyable improvements over *AppleWorks* 2.1. Major additions include a paint-style graphics module, a page-layout module with nifty features, and a communications module. New features include variable fonts and a spelling checker in the word processor, graphing capabilities in the spreadsheet, a smoother and more Mac-like desktop, and full support of color. Running *AppleWorks* 2.1 makes the GS feel like a bigger, zippier Apple II; *AWGS* makes it more like a mini Mac II.

Bad News. Unfortunately, other features seriously detract from *AWGS*'s luster. First off, *AWGS* is a RAM hog, needing 1.25MB of memory to run—an expensive proposition at current RAM prices. It's also a disk hog; with GS/OS requiring an entire floppy, and *AWGS* tying up almost all of another, you need either three floppy drives or a hard-disk drive to avoid floppy-disk shuffling whenever you save or recall a file.

AWGS is slow, especially when opening and creating files. Printing is slow too, especially from the spreadsheet. Heavy spreadsheet or database users may well find *AWGS* too slow.

Also, *AWGS* is unstable, particularly when loading *AppleWorks* 2.1 spreadsheet files. I have a 70K *AppleWorks* spreadsheet that I frequently use for testing. This file loads into a IIe in less than 15 seconds and runs just fine, but it invariably bombs *AWGS*, freezing the computer and requiring a reboot. (Claris says that importing an *AppleWorks* 2.1 file can require large amounts of memory, but a 70K worksheet *should* fit in 800K of RAM.)

Claris is, of course, aware of these problems and has promised an update posthaste to cure at least some of them. As I write this, the company is working on the final details. As soon as I know more, I will pass it on to you. In the meantime, hold on to your copy of *AppleWorks* 2.1. ■

CHARLES H. GAJEWAY *can be reached on CompuServe (*ID: 73357,3577*) or on GEnie (*ID: C GAJEWAY*).*

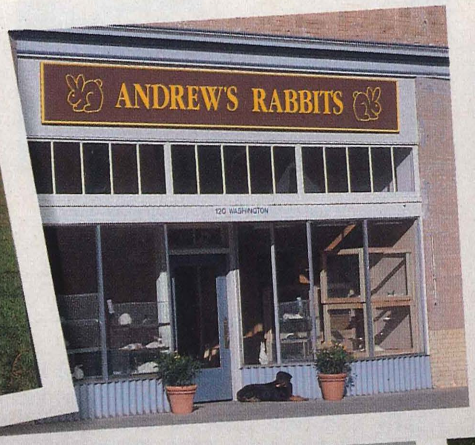
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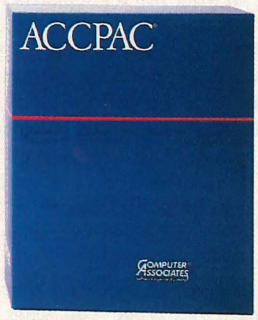


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CIRCLE READER SERVICE 38

Amí Reviewed

BY STEVE MORGENSTERN

Stylish Program Makes Word Processing Like Desktop Publishing for PC-AT Compatibles

If you want your documents to have a visual flair that complements their contents, a graphically capable word processor is a high-priority item. A memo with an attractive layout and creative use of multiple typefaces will attract more attention than a drab printout. A report with charts and illustrations placed strategically throughout the text gains clarity and impact.

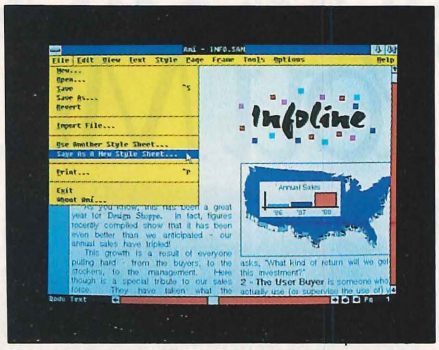
There's no shortage of well-crafted desktop-publishing software in the IBM-compatible world; but the level of expense, training, and capability involved in working with them is overkill for many people. A word processor with graphic capabilities is a useful step between desktop publishing and no graphics at all. The software in this category available to date has been powerful enough, but clumsy to use. *WordPerfect* 5.0 and *WordStar Professional*, for instance, both include useful preview modes that display your document graphically on-screen, but don't let you enter text at the same time.

Amí from Samna Corporation is the only MS-DOS word processor I've seen that provides an effective graphically based screen for writing, comparable to Macintosh word processors. Mind you, *Amí* doesn't offer the same breadth of features as a *WordPerfect*. But the core word-processing capabilities are all there, handled with admirable ease of use; and the integration of editing and graphic display is first-rate.

WRITING IN *WINDOWS*

Amí runs under Microsoft *Windows*, a software environment that provides drop-down menus, mouse-based cursor placement, text highlighting, and command selection. *Amí* comes with a run-time version of *Windows*, which is adequate for using the program. However, if you purchase the full version of *Windows*, you gain the ability to have several programs, including *Amí*, loaded into your computer's memory simultaneously. That lets you move instantly from one *Windows* application to another, and you can cut and paste text and graphics from one to the other.

STEVE MORGENSTERN *is a contributing editor for* HOME-OFFICE COMPUTING.



Style sheets—collections of standard formatting options such as typefaces and margins—are an Amí *strength. So is its ability to import bitmapped graphics into your documents.*

Amí

VERSION REVIEWED: 1.0

SYSTEM REQUIREMENTS: 640K IBM PC or PS/2; 80286 or 80386 microprocessor; one 1.2MB 5.25-inch drive or one 3.5-inch drive; hard-disk drive; CGA, EGA, VGA, Hercules; mouse highly recommended; Microsoft *Windows* optional; DOS 3.0 or higher; 5.25-inch or 3.5-inch

PUBLISHER: Samna Corp., 5600 Glenridge Dr., Atlanta, GA 30342; (404) 851-0007

PRICE: $199

OVERALL PERFORMANCE: ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

ERROR HANDLING: ★ ★ ★

EASE OF USE: ★ ★ ★ ★

SUPPORT: ★ ★ ★

There is more to the *Amí* user interface, however, than straight-out-of-the-box *Windows*. Intelligently designed key-combination shortcuts are provided for virtually every operation or menu selection. For me, this is critically important—I find the mouse can be useful when editing, but having to reach for it while writing is an interruption.

In addition to the keyboard shortcuts, an on-screen panel contains six icons you can click on for instant access to several important functions, including printing, undoing changes, and viewing a full page.

A CHOICE OF VIEWS

Pages you create in *Amí* can be viewed on-screen via two basic displays: layout mode, which provides a graphic representation of the page layout; and draft mode, which offers a crisp generic sans-serif screen font and ignores the formatting niceties. You can enter and edit text in either mode.

The reason you'd opt for draft mode is speed. The graphic layout mode is sluggish, even on my average AT-class machine. If your typing speed is moderate, writing in layout mode may be just fine for you. But if you're blessed with flying fingers, flip into draft mode and type as fast as you like. You can instantly switch back to layout mode.

You have additional display options within layout mode. Those of you who've worked with Microsoft *Write*, the word processor included with *Windows*, are familiar with an annoying display problem: Even common typefaces and sizes, used in standard widths and displayed in standard *Windows* screen fonts, are often too wide to see a full line on-screen without scrolling horizontally. *Amí* lets you use those fonts if you like, but it also provides a Working view, where the fonts are scaled to fit the screen width. Whoever came up with that feature deserves a bonus. Without it, *Windows*-based word processing simply doesn't work. With it, the graphic display is a pleasure.

MAKING TEXT LOOK GOOD

Amí makes good use of style sheets—collections of standardized formatting options. Each individual style sheet specifies typeface size and enhancements (bold, italic, etc.), line spacing, alignment, special effects, and color (if your printer supports this feature) for the block to which it's assigned.

There are two major advantages to the style-sheet system. First, a full set of formatting features can be assigned to a block of text with a single keystroke, instead of specifying each attribute individually. Second, if you decide you'd like to change a typographic feature, you just make the change in the style definition and all the text tagged with that style is automatically updated.

What makes *Amí*'s style sheets so appealing is their simplicity. When you want to adjust a style, a set of full-screen dialog boxes appears with all the available type attributes presented in point-and-click boxes. Better yet, there's a window within these boxes displaying your sample text. This accurate feedback is a wonderful time-saver.

DESKTOP-PUBLISHING FRAMES

The most desktop-publishing-oriented feature of *Amí* is the use of frames to hold distinct blocks of text or graphic elements.

A frame is an independent rectangular unit you place anywhere within the overall page. Your basic document text can flow around the frame or continue on behind it. You can choose from a variety of border styles to surround the frame or have no border at all.

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- Bill Yurdin, Micro D's Cor

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improvements recommend it to
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- Eric Alderman, PC World

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product is nothing short of awesom
Stone, Federal Computer W

"WordPerfect 5.0 offers strong incentives to switch. WordPerfect 4.2 was already the most comprehensive word processing program on the DOS market, but the latest incarnation raises the performance and expectation levels in this category to new highs."
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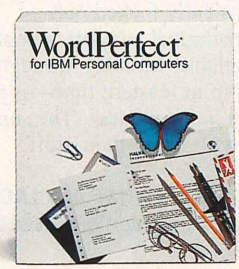
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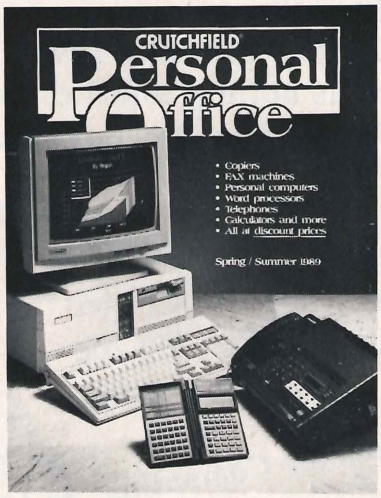
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The number of columns you want within a frame can be set separately from the rest of your document. If you want, for instance, to have a single column in the top half of a page and a three-column block at the bottom, you'd simply create a separate frame for the lower half, specify the three-column layout, and place your text into the frame.

Frames are also used to import graphics into your *Amí* documents. This is one area where the difference between *Amí* and true desktop-publishing programs becomes evident. The only graphic file formats *Amí* will import are .PCX (the *PC Paintbrush* standard) and TIFF (a format commonly used for scanned images)—that's a small fraction of the graphic formats available out there. If you're using the full version of Microsoft *Windows*, however, you can bring in graphics from other *Windows* applications.

By combining movable, sizable frames with an accurate display and three on-screen magnification levels, *Amí* will be adequate for some desktop-publishing tasks, including illustrated reports, simple newsletters, and basic overhead transparencies. However, those trying to tackle serious desktop-publishing work will soon run up against the program's limitations—notably the lack of a system for precisely placing frames.

You have to place these limitations in perspective, though. This is a word processor we're talking about, and its graphic capabilities are miles beyond those found in competing word processors costing two and three times as much.

REVIEW FACTORS

The handsomely produced documentation is clear and informative without being intimidating. In addition to the main user's guide, there's a separate guide to *Windows* that gives newcomers the introduction they need, yet lets seasoned users ignore that section of documentation. Information on the most complex function of the program, style sheets, is expounded upon in a separate booklet, with samples of output created using each of the provided styles. A Quick Reference card is included, handy for a program that makes such good use of keyboard shortcuts. And finally, the on-line help is readily available and well organized.

The basic error-handling problems are standard *Windows* problems, such as trying to access an empty disk drive. There are warning prompts if you try to leave a file without saving it, and inappropriate choices are consistently locked out.

The technical-support telephone number—available Monday through Friday, 8 a.m. to 8 p.m. eastern time—is prominently displayed in the manual. The support people I spoke with knew their stuff.

ON ONE HAND—WHAT *AMÍ* LACKS

For all its graphic flourishes, *Amí*'s basic feature set still falls into the "executive word processor" class. The program does offer automatic hyphenation, newspaper-style multiple text columns, search-and-replace functions, and a reasonably good spelling checker with a copious dictionary (130,000 words). However, some of the missing features could make a difference to you.

With no footnoting capability, the program is unsuitable for most academic writing. There's no built-in math capability, no index or table of contents generation, and no macro capability for recording and playing back frequently used keystrokes. Many popular word-processing packages today include a thesaurus—*Amí* doesn't. Another notable omission is the lack of mail merge.

In addition, while *Amí* may be "user-friendly," it's a bit snobbish. If you don't have a relatively high-powered computer, you won't be writing with *Amí*. Specifically, the program requires an AT-compatible (80286-based) or 80386-based system and either Hercules monochrome graphics or EGA or VGA color graphics. The version I reviewed wouldn't work with the older CGA color graphics standard, although the publisher is now offering a supplement which gives it that capability. Officially a mouse is optional, but who's kidding whom?

ON THE OTHER HAND—SUPER GRAPHICS ABILITIES

Amí offers a distinctive method for creating documents. While it's not as precise or flexible as dedicated desktop-publishing software, the program's ability to produce graphically intricate pages—with imported images, boxes, rules, colors, and shaded areas—is impressive.

Amí's graphic display is useful, even if you don't plan to create design-heavy publications on your computer. I, for example, use a laser printer and like to take advantage of the printer's capabilities even for my routine correspondence. By seeing the fonts I've selected on screen, I can immediately judge the impression I'm making.

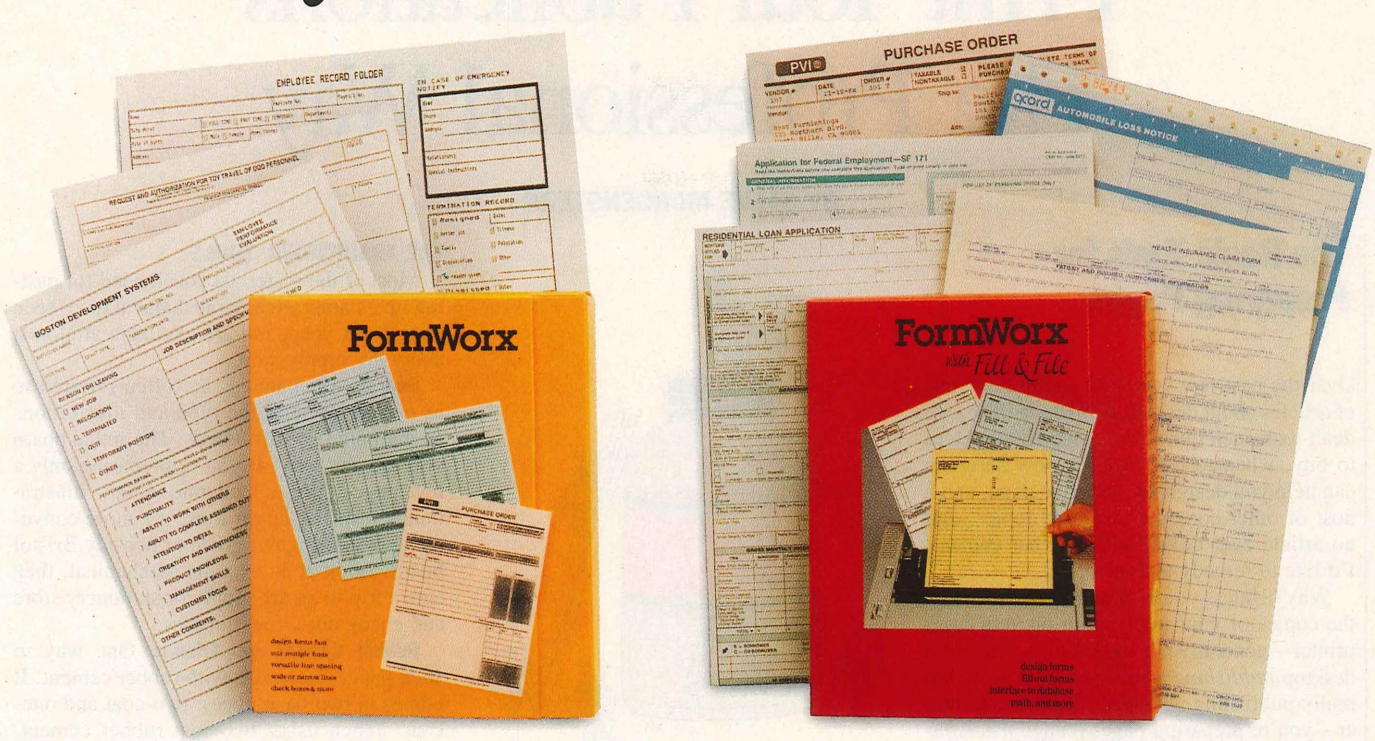
Amí already offers the features required for most writing assignments. For those which require more specialized capabilities, such as mail merge and footnoting, the company promises to release the more feature-packed *Amí Professional* in mid-1989 and offers a $100 rebate on the new product for purchasers of *Amí*.

LIKE THE GOOD OLD DAYS

In one sense, working with *Amí* is like a step back to the days of writing on a typewriter. The screen looks like a white sheet of paper in the platen. The letters appear on-screen in black, looking the way they'll actually look in the final printout. The element of surprise inherent in working with character-based word processing is gone.

Good riddance. ■

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CIRCLE READER SERVICE 42

Print Your Publications The Professional Way

BY STEVE MORGENSTERN

The Basic Tools for Preparing Pages

Over the past few years, I've read hundreds of articles about desktop publishing. They've dealt with such questions as which typefaces to buy, when to use clip art, how software can help you design an attractive page, and a host of other computer-centered topics. But no article ever talked about rubber cement. I'd like to remedy that situation.

Why? Unless you're planning to run off all the copies of your publication on your laser printer—generally not a good idea—the term desktop *publishing* is misleading. You're not really publishing with your desktop computer—you're preparing pages (called *mechanicals*) for your printing company. Even with computer output, preparing mechanicals inevitably requires a little manual labor. And often some rubber cement.

GETTING PAGES READY FOR THE PRINTER

Mechanicals are a publication's final pages ready for professional printing. What's that mean? All of the type is in position. Depending on the kind of illustrations, the actual finished artwork may be pasted in place, or positioning indicators on the mechanicals will show where the art is supposed to go. Mechanicals are called *camera ready* because the printer photographs them with a special camera to produce films, which are then turned into plates for the printing press.

Creating camera-ready mechanicals without a computer requires meticulous hand labor performed by people called mechanical artists or, more commonly, pasteup artists. Sometimes the job is a breeze—preparing single-column mechanicals for a novel, for instance. But the average magazine page has several columns of type plus illustrations, captions, and page numbers. Thin rules, or lines, and other graphic details may also appear. Using traditional techniques, each of these elements would arrive on separate pieces of paper, and the pasteup artist would have to precisely position them all.

Today, of course, we can handle much of that assembly process with the computer. But

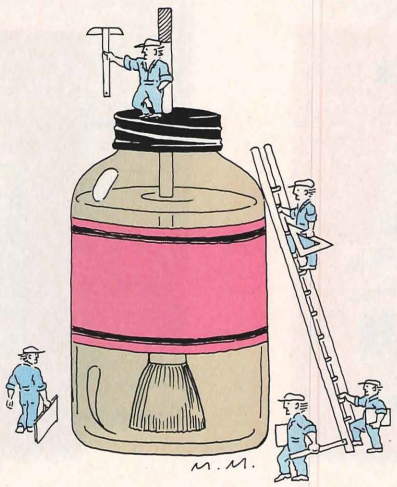


ILLUSTRATION BY MONA MARK

you still don't want to hand the pages directly from your laser printer or the typesetter's equipment to your printing company. At the very least, you need to mount the flimsy printouts on stiff boards so that they survive the handling they will receive. You may need to add illustrations or positioning indicators by hand. It's often easier to make simple corrections by hand on boards instead of rerunning an entire page, and it's much less expensive if you're sending the job out for typesetting. Some tasks are always easier to do by hand than on a computer—for example, placing a strip of type on a diagonal.

Bottom line, printers don't care whether you're working with a computer system or a roomful of calligraphically trained chimpanzees—they want complete, traditional mechanicals, just the way they've been getting them for decades. And that requires a little effort on your part.

Newcomers should certainly ask to see the kind of mechanical the printer is used to receiving—a lot of questions will evaporate when you get a look at a finished product. There may be times when a job is complex, and you need a professional pasteup artist. If you don't know one, your printer undoubtedly will have a recommendation. However, with the computer handling most of the manual-dexterity end of mechanical preparation, even a klutz like me can usually prepare an acceptable mechanical for printing. Here is a short guide to the basic tools of page preparation.

THE TRADITIONAL TOOLS

Most of the materials you'll need for pasting up a camera-ready mechanical have been around for years and are available at almost every art-supply store.

Boards. Mechanicals are often referred to as *boards* because the type and illustrations are mounted on stiff boards. The actual board you use can vary. If you're preparing only a few pages, use a moderate-weight illustration board. For larger jobs, it's more convenient to use a lighter grade of two-ply Bristol board. Look at an existing mechanical, then take a trip to an art-supply or stationery store and check out a few samples.

Rubber Cement and Friends. One way to stick paper to board is with rubber cement. It comes in two basic types: two-coat and one-coat. When using two-coat rubber cement, you put a thin layer on both the board and the back of the paper to be glued down, wait for them both to dry, then paste the item down. One-coat is more difficult to find for some reason, but more convenient. As the name implies, you apply one-coat only to the paper, wait for it to dry, and then place it on the board.

Unless you're using very small quantities, you'll want to buy rubber cement by the quart or the gallon and pour it into a special bottle with a built-in brush.

When it comes to preparing mechanicals, rubber-cement thinner is the elixir of the gods. If you need to move a piece of type after it's been pasted down, applying some thinner will loosen it from the board and allow you to make adjustments. Pasteup artists use containers that look like old-fashioned oil cans to apply thinner.

A small roller with a plastic wheel—called a burnisher—is another essential tool. It's useful for smoothing the paper down on the board and assuring even contact.

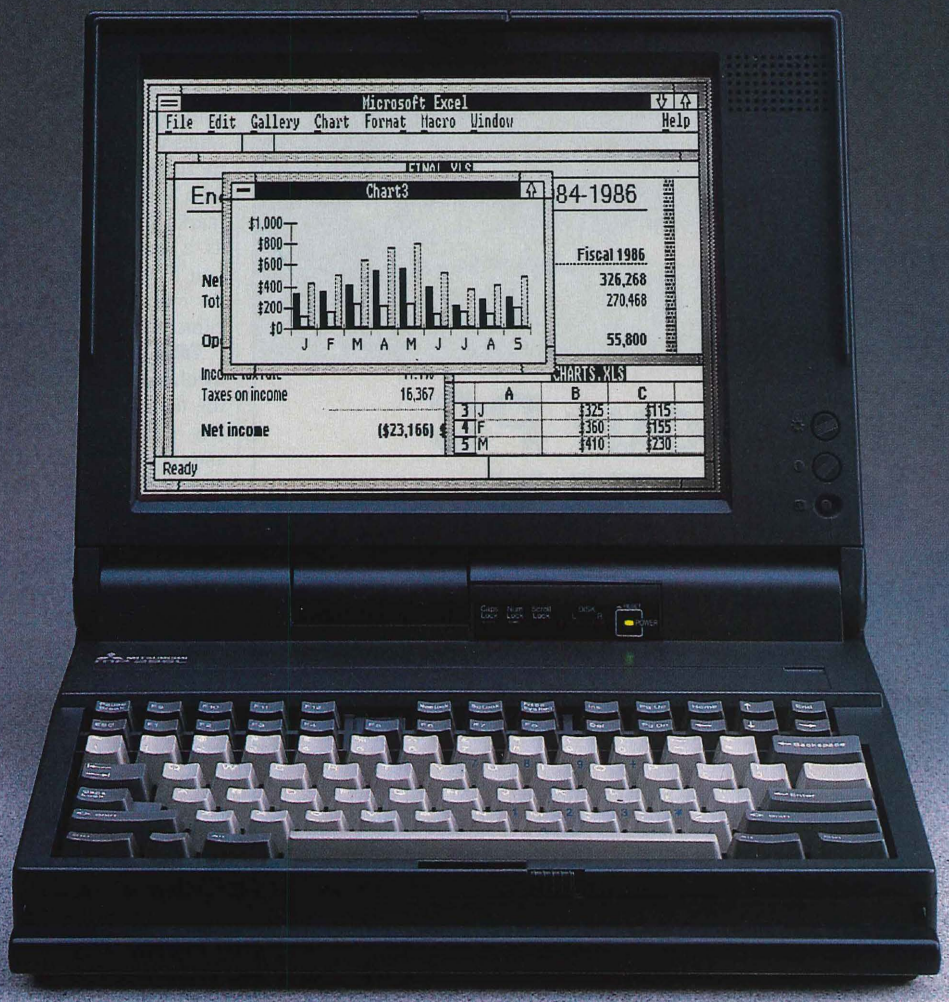
The last item you'll use when working with rubber cement is a pickup. Inevitably some rubber cement will extend beyond the edge of the paper or drip in an unwanted spot. A pickup is basically a rubber-cement eraser—a rectangular block that picks up rubber cement from the page with a brisk rub.

A very important note about rubber cement and thinner—you must use them in a well-ventilated area, because the fumes can be harmful. For this reason, some pasteup

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For the authorized mp286L reseller nearest you, call 1-800-556-1234 ext. 25 (in California, 1-800-441-2345 ext. 25) or write: Mitsubishi Electronics, Information Systems Division, 991 Knox Street, Torrance, CA 90502.

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CIRCLE READER SERVICE 66

MITSUBISHI ELECTRONICS

artists use wax instead of rubber cement. However, the tabletop wax machine is an expensive piece of equipment, and the more affordable portable waxers are clumsy at best. Rubber cement is fine, as long as you let some air into the room.

Spray Mount. Nowadays, instead of rubber cement, many pasteup artists prefer a spray-mount adhesive (Scotch is one popular brand). Although more expensive than rubber cement, spray adhesive is easier to work with. It comes in an aerosol can, and you can easily remove any paper pasted down with it without using thinner.

Non-Repro Blue. As I mentioned earlier, printing is a photographic process. Sometimes you'll want the marks you make on the mechanical to show, and sometimes you won't. Any old red pen or pencil is fine for marks you want the camera to pick up (such as a quick addition to a rule). However, you'll want a *non-repro blue* pen or pencil for marks you'd like to disappear when the camera shoots your mechanical.

Table and T Square. If you're serious about mechanical preparation, you'll need a drafting table and a T square. The drafting table has a rectangular working surface and smooth outer edges. The T square has a head and a straightedge mounted at a perfect 90 degree angle. If you hold the head of the T square firmly against the side of a drafting table, the straightedge forms a reliable horizontal, which can be used to align illustrations and other elements on your mechanical.

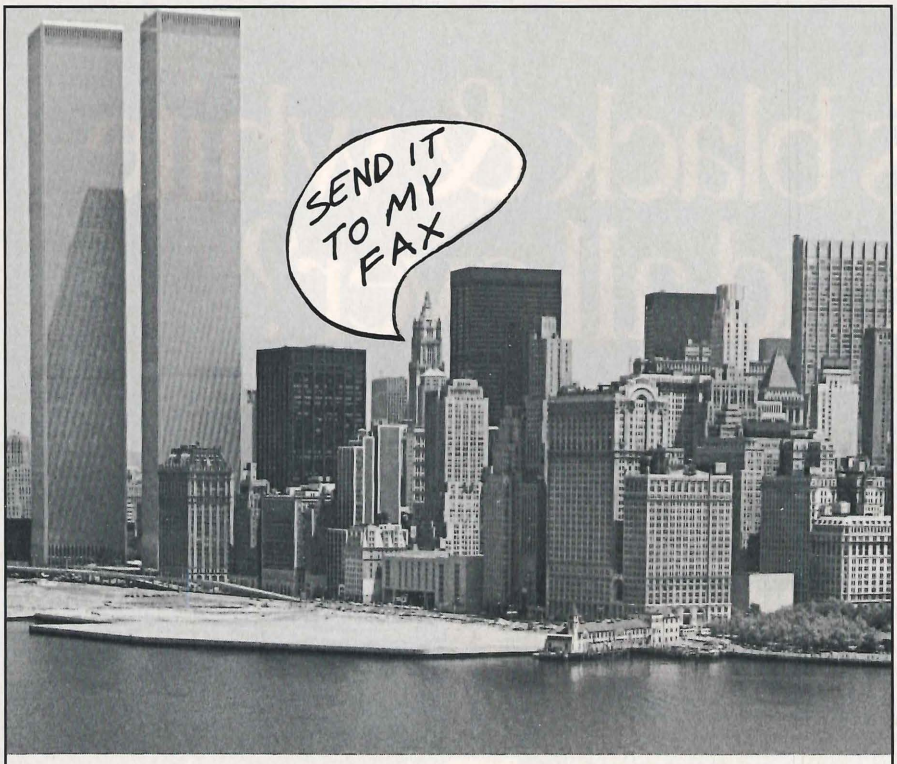
To make occasional mechanicals using output from your computer, you can get by with a ruler. I would make at least one more addition to your arsenal, though—a plastic triangle. It's relatively easy to draw a rectangular box, or line up items along a perpendicular, if you align one edge of the triangle with a predefined straight line (like the edge of the board) and use the triangle's other edge as your guide.

ONE-STOP SHOPPING

To finish your shopping spree (no complaints, now—most of the stuff on the list was pretty inexpensive), you'll want wide masking tape and a pad of tracing paper. The tracing paper should be large enough to cover the entire page area of your mechanical.

You'll want to tape a sheet of tracing paper to the top of each board so that you can lift the tracing paper to read the mechanical. The tracing-paper overlay is usually called a *tissue* and serves a dual purpose. It protects the surface of the mechanical, and since you can still see the mechanical through the tracing-paper overlay, it's also a perfect place to mark information for the printer—instructions for using color, for example.

Put all this stuff on your worktable at home and your friends will think you really know what you're doing. ■



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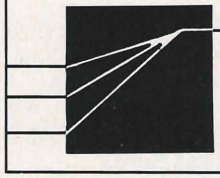
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CIRCLE READER SERVICE 62

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*Based on CCITT Group 3 Test Chart.

Create Inexpensive, Yet High-Quality Presentations

BY RONNI & HARRY GEIST

A Side-by-Side Comparison of *Pinstripe Presenter* and *PFS: First Graphics*

Without visuals to back them up, numbers are pretty dry. That's why most spreadsheet software can produce charts and graphs. However, the quality of those graphs invariably disappoints us, especially now that dedicated presentation-graphics programs such as *Harvard Graphics* and *Xerox Presents* are on the scene.

Yet if you're not regularly creating presentation graphics, the cost of such programs, both in dollars and the time it takes to learn them, can be steep. That's why we think many people will be interested in *Pinstripe Presenter* (Spinnaker Software) and *PFS: First Graphics* (Software Publishing Corporation)—two inexpensive, easy-to-use programs that can make attractive graphs and charts.

NO NEED FOR AN ART DEGREE

You don't have to be an artist to create professional-looking visuals with these packages. They're both menu driven and operate similarly: Choose a type of chart—for example, pie, bar, line, area, or word—enter your titles and subtitles, input your data, and your chart is displayed. If your data is currently stored in a Lotus *1-2-3* or *Symphony* format, you can import it directly, and both presentation-graphic programs can also import ASCII files for word charts.

Suppose you don't like the way the chart looks? Not only can you easily adjust the colors and fill patterns as well as the type size and style, but you can choose a different kind of chart, and either program will automatically regraph your data in seconds.

GETTING UP AND RUNNING

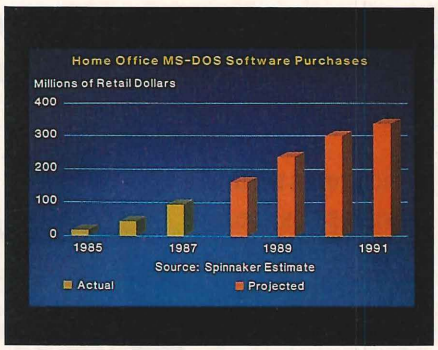
To get you up and running quickly, both programs provide tutorials. We especially liked *First Graphics*'s "Charts in a Hurry." Particularly well designed, this disk-based tutorial allowed us to enter our own data into the sample charts, rather than the meaningless array of preset figures many tutorials use. This meant that we could produce useful charts immediately.

Pinstripe Presenter's "Quick Start Tutorials," on the other hand, were wordy narratives (we would have preferred a step-by-step list of instructions). They sometimes indicated that items would appear on-screen, and they never did. While this wasn't terribly confusing, it was annoying. Although both programs offer on-screen help, we generally found the help screens in *First Graphics* more valuable than those in *Pinstripe*, which often referred us back to the user's manual.

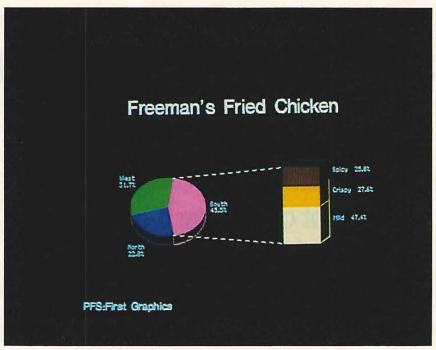
CUSTOMIZING YOUR CHARTS

Customizing presentations is the real strength of these software packages. Want your text to look especially good? In *First Graphics* you can choose one of five fonts (including Gothic and Script), access some special attributes (such as italics or underline), or change the color of the type. Although *Pinstripe* doesn't offer the same typestyle choices, it does let you adjust type size and color and create attractive drop-shadow effects (which give depth to images such as boxes). If you're creating a line or scatter chart with *First Graphics*, you can choose from 13 marker symbols—such as boxes, stars, and diamonds—to represent data points. Want to add more depth to your diagrams? With both *Pinstripe* and *First Graphics*, you can create three-dimensional bar and pie charts; and in *Pinstripe* you can change the shading patterns on the top and sides of the bars or slices to enhance the 3-D effect. Need to highlight a specific slice in a pie chart? Explode it! Both packages let you cut a slice away from the rest of the pie.

Pinstripe Presenter has one exceptionally



The increase of software sales to the home office is illustrated clearly through this Pinstripe Presenter *graph. Its impressive 3-D effects are enhanced through shading the bars.*



Colorful graphic presentations, including such easy-to-create visuals as the pie and vertical-bar charts above, make PFS: First Graphics *useful for salespeople and consultants.*

Pinstripe Presenter

VERSION REVIEWED: 1.0

SYSTEM REQUIREMENTS: 512K IBM PC or PS/2; hard-disk drive; CGA, EGA, VGA, MCGA, Hercules; mouse; 5.25-inch and 3.5-inch

PUBLISHER: Spinnaker Software, One Kendall Sq., Cambridge, MA 02139; (617) 494-1200

PRICE: $200

OVERALL PERFORMANCE: ★ ★ ★

DOCUMENTATION: ★

ERROR HANDLING: ★ ★

EASE OF USE: ★

SUPPORT: ○

PFS: First Graphics

VERSION REVIEWED: 1.0

SYSTEM REQUIREMENTS: 320K IBM PC or PS/2; two drives (hard-disk drive optional); CGA, EGA, VGA, Hercules; 5.25-inch and 3.5-inch

PUBLISHER: Software Publishing Corp., 1901 Landings Dr., Mountain View, CA 94039; (415) 962-8910

PRICE: $149

OVERALL PERFORMANCE: ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

ERROR HANDLING: ★ ★ ★

EASE OF USE: ★ ★ ★ ★

SUPPORT: ★ ★ ★

RONNI & HARRY GEIST *have been involved with microcomputers since 1980. They write articles on computer topics for several publications.*

powerful feature that can really get your creative juices flowing. A library of professionally designed, multicolor clip art (including electronic devices, spacecraft, maps, borders, arrows, check marks, and balloons) comes with the package. You can move symbols into charts as background designs and ornaments or scale them to size and use them to represent data on the graph. To illustrate the use of the symbols, *Pinstripe* included some extraordinary charts with multiple overlays. When we tried to emulate them, we were disappointed to find that the user's manual falls short—it doesn't really explain how a novice can duplicate these sophisticated graphics. However, we were able to superimpose a bar chart on a map.

CREATING PRINTOUTS, SLIDES, AND OVERHEADS

Even though *Pinstripe* has only two type styles, the powerful software and the vast symbol library yielded output, both on-screen and with a HP LaserJet printer, that far outshined *First Graphics*'s. Surprisingly, however, when we tested both packages using an Epson 9-pin dot-matrix printer, the *First Graphics* printout was of lusher quality than the one from *Pinstripe*.

If you need to create 35mm slides, *Pinstripe Presenter* also supports the Polaroid Palette and Palette Plus, and Spinnaker has an arrangement with MAGICorp, a slide-service company that will produce ultrahigh-resolution 35mm slides, color overhead transparencies, and black-and-white prints from *Pinstripe* files transmitted via modem. Unfortunately, the publisher of *First Graphics*, Software Publishing Corporation, has no similar arrangement.

Both *First Graphics* and *Pinstripe Presenter* are also designed to produce on-screen slide shows; and in this area, *Pinstripe*'s "Screen Director" incorporates a couple of nifty features. Double buffering builds the next image in memory as you are viewing a slide so your audience doesn't have to wait for each new graphic to be composed on-screen. And a timed loop enables you to produce a slide show that will run automatically. *First Graphics*, however, does not have these same capabilities; you need to press a key each time you want to move to the next slide, and it has to be composed on your monitor.

GLITCHES AND IDIOSYNCRASIES

Unfortunately, neither program is problem free. A potentially powerful package, *Pinstripe Presenter* has several weaknesses. Perhaps its most pervasive is that it makes you navigate a maze of menus and choices in order to harness the program's power. We found it awkward and confusing. Although the program utilizes many icon-based menus and a file-cabinet-and-folder scheme for storage, when we had to move among folders or file cabinets, we frequently found *Pinstripe* to be "user-klutzy."

In *Pinstripe*'s Screen Director slide show, some basic components appear to be missing. For instance, you cannot save your timed slide show for presentation at a later date. To make matters worse, the section of the user's manual describing the Screen Director is incomplete. For a package with so many powerful capabilities, the lack of these basic components can be a considerable detriment.

We also encountered some problems with *First Graphics*. For example, on bar charts, numbers representing values frequently overlapped, making them difficult—if not impossible—to read. And on free-form word charts, words on the right side were sometimes truncated without any warning (unless we previewed the chart first).

PUBLISHERS' SUPPORT

Both Spinnaker and Software Publishing maintain non-toll-free telephone support lines. At Software Publishing, we were able to get through to support personnel in minutes. Although they indicated that they were more familiar with *Harvard Graphics* (the big brother of *First Graphics*), they answered all our questions quickly.

Spinnaker's support line left a lot to be desired. Its two phone numbers were continuously busy, and calls to one of the numbers typically yielded nothing more than a repeated beep (we later learned that the support department's answering machine was broken and further learned that the publisher now has voice mail).

When we were able to get through to the support line again, the woman we spoke with was more helpful. She verbally wrote off many of our questions as "doc[umentation] errors" and admitted that sometimes you need a "road map" to navigate the software. In fact, because the software is so complex, it took about a half hour to walk us through the answers to our questions.

WHICH ONE IS BETTER?

It's unfortunate that *Pinstripe* can be so difficult to work with, because its output is outstanding. If the people at Spinnaker had put more thought into ease of use, complete documentation, and basic elements of the Screen Director, they would have a dynamite package at an affordable price. If you want to create charts that will "knock your audience's socks off" and have the intestinal fortitude to maneuver through a complex hierarchy of menus and options, *Pinstripe* will reward you. However, if simplicity, good on-screen quality, and superior dot-matrix output will suit your needs, then consider *PFS: First Graphics*. ■

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CIRCLE READER SERVICE 54

Stock Information Is Just a Keystroke Away

BY NICK MAFFEI

Gain an Investment Edge With Two Programs From Telescan

With more than 10,000 companies listed on the New York Stock Exchange, the American Stock Exchange, and NASDAQ, how should an independent investor decide which stocks to buy and sell?

The fact is, intelligent investing requires considerable research, but it's easy to get confused and overwhelmed by the abundance of information.

Computerizing your investment portfolio can help you make better buying and selling decisions more quickly. You'll need two things: a program that screens investments and access to an on-line database that provides services and information.

There are many good investment programs and on-line database services to choose from, but Telescan's *Analyzer* and *Edge* stand out from the pack.

THE *ANALYZER*

Telescan Analyzer, the software you use to search through the Telescan on-line service, is one of the best bargains in on-line stock-market investing. Since its introduction in 1983, it has become one of the leading investment-analysis services. Telescan's combination software and database service makes available 15 years of data on more than 10,000 active stocks, 2,000 mutual funds, and 200 market indexes with just a modem and an IBM-compatible computer.

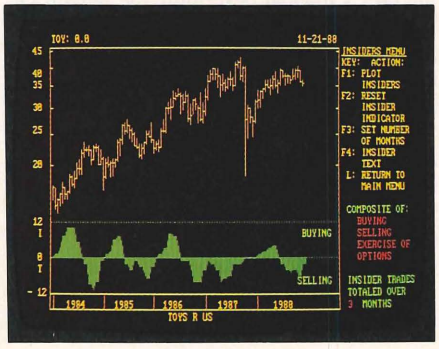
The *Analyzer* offers both fundamental and technical analysis of the stock market. Fundamental analysis addresses the profit potential of individual companies and displays the net worth of each share, current assets, book value, future earnings, and dividends.

The technical analysis assumes that fundamental information is already reflected in the price of a stock and concentrates on the supply and demand of the stock. It assumes that future price patterns can be predicted through analyses of past price momentum and focuses on moving averages, on-balance volume, and relative strength.

Both types of information can be displayed within minutes. You simply log on to Telescan, select the stock or mutual fund charts you want, and download them to your computer. The *Analyzer* does all the data collection, chart construction, and daily data updates.

Other unique features include:

- Inflation-adjusted charts
- Graphs of insider trading
- On-line access to investment newsletters
- Access to financial market news



This chart from Analyzer *shows insider trading for Toys-'R'-Us. The buying and selling activity of top executives is plotted in green and can be compared to the price of the stock (in yellow).*

Telescan Analyzer v2.5 and Telescan Edge v1.0

SYSTEM REQUIREMENTS: 384K IBM PC; 1200- or 2400-baud Hayes-compatible modem, CGA, EGA, VGA, or Hercules. *Telescan Edge* requires the *Analyzer*

PUBLISHER: Telescan Inc., 2900 Wilcrest, Suite 400, Houston, TX 77042; (713) 952-1060

	Analyzer $80	*Edge* $295
PRICE:		
OVERALL:	★ ★ ★ ★	★ ★ ★
DOCUMENTATION:	★ ★ ★	★ ★
ERROR HANDLING:	★ ★	★ ★
EASE OF USE:	★ ★ ★	★ ★ ★
SUPPORT:	★ ★	★ ★

GET THE *EDGE* FOR MORE COMPREHENSIVE SCREENING

Telescan Edge, introduced last fall, is an enormously powerful and useful tool for screening companies, industries, or mutual funds as potential investments.

Edge, an add-on to *Analyzer*, searches through Telescan's database and finds the best stocks and mutual funds to analyze.

For example, suppose you want to know which stocks have the highest five-year compound-earnings growth and the most insider trading. The report will list 10 to 200 stocks that best meet your investment criteria—ranked in order of appropriateness.

Edge currently offers 50 technical and fundamental search criteria—more than 100 are promised in future versions. As many as 15 criteria can be used in a single search request, and the search can be applied to all stocks, option stocks only, mutual funds only, industry groups only, or stocks within specified industry groups.

COSTS AND EASE OF USE

In addition to a connect-time charge (60 cents per prime-time minute, 30 cents non-prime time), you pay $2 per search prime time and $1 per search non-prime time for *Telescan Edge*.

Both *Telescan Analyzer* and *Edge* are easy to use and can be installed on a hard disk in minutes. The programs share two main menus: a Log-On Menu for connecting to the database, and an Off-Line Menu for viewing previously saved graphs, developing customized stock lists, and performing file operations.

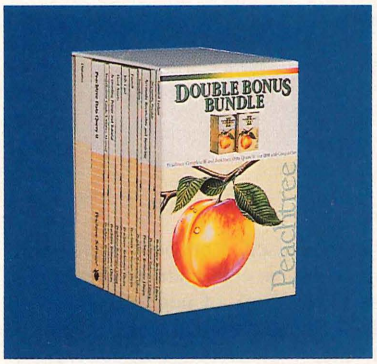
If you hate reading manuals, Telescan offers a videotape showing how to use and interpret its programs. *Edge* has an excellent tutorial with tips and techniques on using the program to develop investment strategies.

The *Telescan Analyzer* and *Edge* combination provides a complete package for both private and professional investors at a competitive price. Together they provide all the fundamental and technical indicators needed to choose and analyze stocks or mutual funds. ■

See next month's Telecomputing department for information on Disclosure *and* Investext, *two databases with corporate financial information and analyst reports available through major on-line services.*

NICK MAFFEI *is a writer, teacher, and lecturer specializing in stock-market strategies. He is a professor at the San Francisco State University School of Business.*

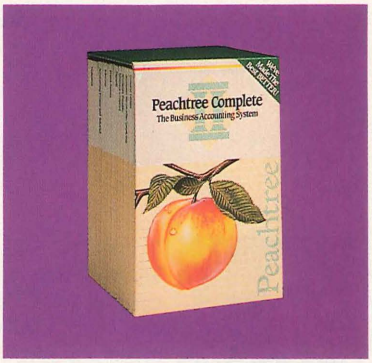
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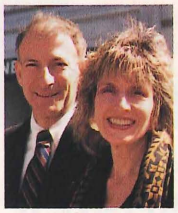
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CIRCLE READER SERVICE 53

How to Sell and Negotiate Like a Pro

BY PAUL & SARAH EDWARDS



If you're like many home-based businesspeople, your biggest challenge is selling your product or service.

Skilled professionals who may be great at providing a service often go speechless when it comes to selling themselves.

We both had a bout with "salesophobia" after going into business 15 years ago. We loved our work, but felt awkward selling ourselves. We quickly learned, however, that if you can't sell what you do, you won't be able to do it for long. So we learned how to sell. Over the years, we've found that selling can be a natural, enjoyable part of providing a service. As it turned out, we already knew how to sell—and you probably do too. Here are four tips that make selling easier.

1. Think service, not sales. You believe in your business and what you do, right? You like to talk about it with friends and loved ones, right? Selling is just like that. When you talk with people about your business, think of it as a conversation—an exploration rather than a sales call. Approach each contact with the question "How can I help?" The truth is that in service and information businesses, promising good long-term service gets you further than good one-shot salesmanship.

2. Make warm, not cold, calls. There is nothing more intimidating, even for experienced salespeople, than cold-calling a list of faceless names. Instead, begin your sales efforts with people or businesses that you think could use your service.

Suppose your business involves desktop publishing. Every mailer you get that doesn't look professional is a job lead. Call the company that sent out the mailing. Compliment the manager on the direct-mail campaign and ask how it's produced. Then offer to show him or her how you could improve it.

3. Don't ask them to buy, ask if they're interested. If you've studied sales techniques, you've probably heard about closing—the part of the deal when your palms really begin to sweat and you ask for the business. We find that if we forget about closing and just try to determine if the person is interested, things go much better. The question to ask is "Would you be interested?" It's an easier question to ask than "Do you want to buy?" and is more likely to produce a positive answer. If you get a yes, negotiate. If you get a no, ask why not. When your prospect has a good reason, agree with him or her. Try to provide additional information about what you're offering to answer his or her concerns.

If you can't sell what you do, you won't be able to do it for very long. So we learned to sell.

4. Treat everyone as a prospect. We've found that selling is not as much about winning and losing as it is about relationship building. Sarah used to pretend she was doing a radio interview when talking to prospective clients, asking questions such as "How did you get into this business?"; "How is it going?"; "Do you like it?"; "Where do you take it from here?".

Bill Slavin, partner in charge of information technology at the consulting firm Peat Marwick, told us, "You never know who your next client will be, so I treat everyone as a prospective client." So do we.

NEGOTIATING LIKE A PRO

Negotiating may be part of making a sale or it may follow a sale. "I know he wants it," you say to yourself, "but how much will he pay for it?" Some entrepreneurs are born negotiators. They think of negotiating as a game and excel in the art of making a deal. But most find it a harrowing experience. Here are four tips that should help put you at ease at the negotiating table.

1. Start with a plan. Going into negotiations with a plan bolsters your self-confidence and increases the likelihood of getting favorable results. Advance planning prevents you from making an offer that is absurdly high or low.

The key to a negotiating plan is defining exactly what you want. We use the following system from our friend, negotiating expert Elaine Ré, to make sure our plan includes these three elements: *maximum justifiable position*, *real goal*, and *walk-away point*.

2. Begin negotiating from your maximum justifiable position. If you aim high, you're more likely to settle high. In other words, ask for more than you expect or need, within reason. Putting a justifiably high price on your services communicates confidence and commands respect from the potential client.

3. Be ready to accept your real goal. Your real goal is what you will be satisfied with. (As a seller, that's a higher price than you might pay as a buyer—as a buyer, it's a lower price than you might accept as a seller.) Whether your goals involve money, timing, or conditions, a real goal is what will make you happy with the deal.

4. Know when to walk. Your walk-away point is your bottom line—the point below which you will not go. It's important to define this for yourself in advance, so you're not pressured into an unacceptable deal. If you're negotiating through an agent, such as an attorney or a broker, a walk-away point limits power of authority. In the heat of negotiation, there's always the danger of setting an arbitrary walk-away point without a logical rationale.

Determining your positions in advance lets you concentrate on what people are saying during the negotiation instead of planning your responses.

For more information on negotiating, we recommend the book *Getting To Yes*, by Roger Fisher and William Ury (Houghton Mifflin Company, 1981). ■

PAUL & SARAH EDWARDS *are the authors of* Working from Home: Everything You Need to Know to Live and Work Under One Roof *(Jeremy P. Tarcher, 1987). They cohost the "Home-Office Radio Show" on Business Radio Network and operate the Working From Home Forum on CompuServe (GO WORK).*

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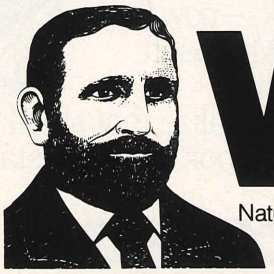
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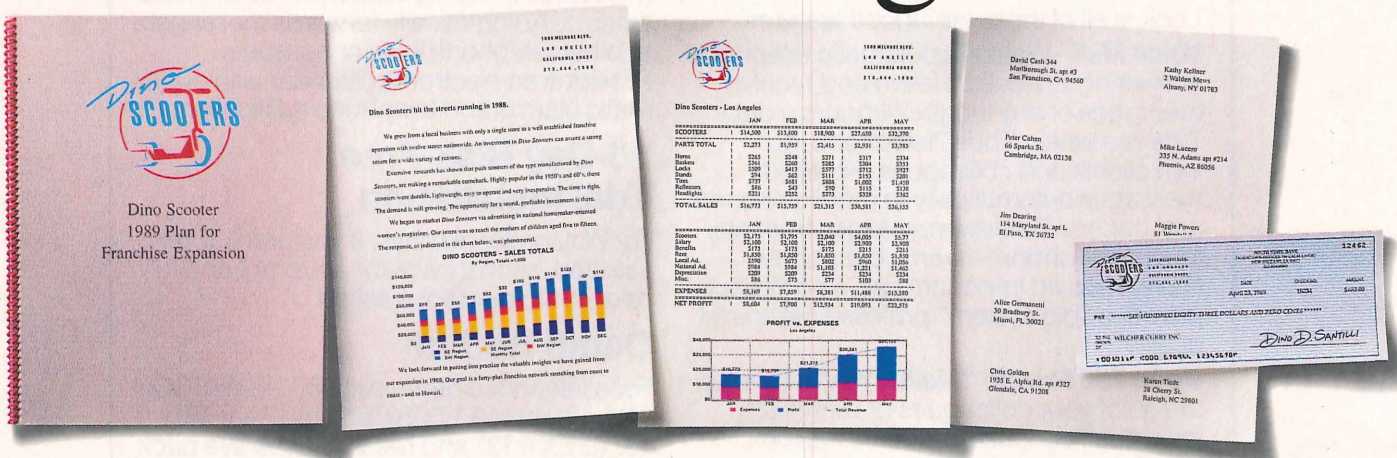
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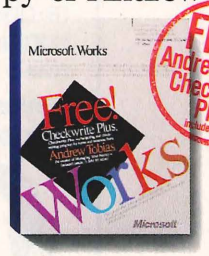
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Home Office COMPUTING

The Hottest Franchises For the Home-Based

For as Little as $2,000, You Can Buy Your Own Business—Complete with Training, Materials, and Ongoing Support. Plus: What You Need to Know Before You Buy

BY LYNIE ARDEN



The British claim that the first franchise flowed from a keg in the early 1700s when an industrious proprietor distributed his ale to other pubs. In the 19th century, Singer employed the same concept to boost its sewing machine sales. But it wasn't until after World War II, when franchise pioneers like A&W Root Beer, Baskin-Robbins, and Hertz Rent-A-Car took advantage of prosperous economic conditions in the United States, that franchising really took off.

Since then, the growth of franchising has been phenomenal, with service franchises rapidly outpacing product franchises. The International Franchise Association (I.F.A.) concluded from a recent survey that by the year 2010, one-half of all retail dollars will be generated by franchises.

Franchising is a method of distributing products or services. A franchisor offers his or her trademark, trade name, and business system to a franchisee who pays an initial fee and royalties for the right to use the franchise name, products, and procedures.

Many franchises can be operated from a home office. And the home-based franchisee has some advantages over his or her storefront counterpart. Starting a storefront franchise can cost hundreds of thousands of dollars, whereas a typical home-based franchise requires as little as $2,000, and rarely more than $50,000. With less overhead and simpler payroll, tax, maintenance, and insurance requirements, risk is lower and profits are potentially greater.

Technology has also helped bring franchises home. As in any home-based business, a computer, high-quality printer, multiline telephone, and the right software can eliminate the need for additional employees and create a professional image. In fact, computer experience may give you a leg up on someone starting from scratch. And if you already own home-office equipment, you may save on the start-up costs.

We've taken a close look at four people who have benefitted from great opportunities in home-based franchising. Included are our choices for the fastest-growing industry, the best opportunity for women, the best return on an investment, and the best niche.

In addition, our list of 50 franchises you can run from home may lead you to your next career. But if you don't find your ideal business here, there are hundreds more out there.

Contributing editor LYNIE ARDEN *is the author of* 101 Franchises You Can Run from Home, *to be published by John Wiley & Sons next spring.*

FASTEST-GROWING INDUSTRY

Housekeeping Services

"In John Naisbitt's best-seller *Megatrends*, maid services is listed among the six growth industries for the nineties," says Frank Flack, CEO of Molly Maid, the fastest-growing international maid service. The company's business tripled in 1987 and doubled to its current level of just under $20 million a year in 1988. "Roughly 52 percent of American households are two-income families. That figure is expected to grow to 66 percent in the next 10 years, and maid services will grow along with it. There are 50 million women in the work-force—about 40 percent of them have some form of domestic help. Juggling a career and family can take some doing. A working woman is likely to exchange money for time—something she has precious little of. She can save five or six hours a week to do things that are more gratifying than cleaning windows or dusting under the bed."



Jim Tessmar and Diane Balagna's team of Molly Maids can clean an average three-bedroom house in about two hours.

PHOTOGRAPH BY MARK MILLER

Husband and wife Jim Tessmar and Diane Balagna have been running a Molly Maid franchise from their Huntington Beach, California, home for three years. Both have backgrounds in corporate finance and they decided to purchase a house-cleaning franchise for a combination of reasons: "We were both working and we needed a housekeeper," explains Tessmar. "We interviewed some people, but they never worked out. We felt there had to be a better way for people to get the help they needed."

This need sparked an idea. They had always considered owning a business and felt that there was a market for quality maid services. The couple considered starting a maid service independently but decided to first research the available franchises.

They looked at many possibilities, in maid services and other industries. Says Tessmar, "We had to eliminate anything that required substantial amounts of capital. That ruled out typical storefront operations."

They found that most maid services had comparable fees and the same team-cleaning methods. "We went with Molly Maid because the company had the most comprehensive marketing plan and the best image," says Tessmar. "Image is crucial in this business because you need instant credibility and trust in order to get a key to someone's home." The Molly Maid image is reinforced with cars sporting the company logo, English maid uniforms, and designer duds for the franchise owners. Tessmar believes that these touches "not only attract competent help, but are deciding factors in a customer's choice of Molly Maid over other maid services."

Tessmar and Balagna's franchise has grown as rapidly as the industry. They grossed about $4,000 a month the first year. Now they employ seven teams of two maids each, lease nine cars, and gross more than $25,000 a month. After expenses, which include maid salaries, transportation costs, and 6 to 10 percent royalties, the couple keeps about $4,000 a month. And they expect that figure to continue growing.

Tessmar credits the addition of a Tandy 3000 and NEC printer as part of the reason for the increase in business.

"Working with the computer really saves a lot of time," says Tessmar, who estimates that he and his wife each devote 70 hours a week to the business. "After we go out on an estimate, we send a thank-you note, whether or not they buy our service. We used to do that by hand. Now we just change the address on a form letter and send it out. Accounting has gotten a lot easier, too. Payroll used to take two to three hours a week; now it takes about 20 minutes. With all that extra time, we can focus on generating new leads and spending more time doing quality-control checks, which are critical in our business. These checks promote higher cleaning standards, lower our customer cancellation rate, and we also get more referrals when our clients are satisfied."

Besides word-of-mouth referrals from happy customers, Tessmar and Balagna generate new business by hiring a service that distributes door hangers, driving cars with the company logo, and listing in the yellow pages.

"The growth is phenomenal when you consider that a business that we started three years ago at zero sales will bring in $450,000 this year" says Tessmar. "It takes time to get there, but if you are committed, you can make it."

SNAPSHOT

Jim Tessmar and Diane Balagna

FRANCHISE: Molly Maid—cleaning service

RESIDENCE: Huntington Beach, California

INITIAL INVESTMENT: $20,000 in 1986

GROSS INCOME: $450,000 expected in 1989

EQUIPMENT: 640K Tandy 3000 with 40MB hard-disk drive, NEC 5300 dot-matrix printer, answering machine, two telephones

SOFTWARE: Microsoft *Word*, *Bedford Accounting*, Lotus *1-2-3*, *dBase III Plus*, *PC Tools Deluxe*, and *Molly Maid Scheduler*

RX FOR SUCCESS: Set your goals and commit to achieving them. "It doesn't matter if you want to make $2,000 or $2 million as long as you satisfy your personal goal," says Jim Tessmar.

BEST RETURN ON INVESTMENT

Videotaping Services

In 1987, Virgil Miller was injured while performing his duties as senior deputy sheriff in Bakersfield, California. He was referred to a vocational rehabilitation counselor to help him get started in a new line of work. Miller had been videotaping weddings and school activities for friends as a paying hobby, so his counselor suggested learning video production. The training would have taken at least 14 months—that was too long.

Then they discovered Video Data Services, a videotaping service that, for $13,950, provided its franchisees with all the training, equipment, and marketing assistance needed to start a video photography and tape-transfer business specializing in weddings, product demonstrations, sales demonstrations, legal depositions, conventions, and computer graphics. After researching the company thoroughly, the counselor recommended that the county buy the franchise for Miller as part of his compensation.

Video Data Services offered Miller an opportunity to enter a field with explosive growth. Videotaping and transfer services commonly gross six figures a year and Video Data Services claims that anyone following its procedures full-time should be able to reach that income level within two years. "It's all up to you," says Miller. "If you follow the program, you should be able to do it. This is my second year, and it is already a fantastic one. I should reach the $100,000 mark by the fourth quarter of 1989.

"I started this business full-time from day one," says Miller. "I like to tell my law-enforcement friends that I work only half days now that I'm my own boss. They turn green until I explain what I mean—8 a.m. to 8 p.m.." However, long hours are not a requirement, according to Miller. "A lot of affiliates start part-time until they feel secure. The company is great about that. They hold your hand every step of the way, teaching you marketing methods and giving you promotional materials." There are several specialized areas to go into, and Video Data Services teaches you to approach target markets one at a time until you know each one well. For instance, you might start by taping weddings. The company will provide you with tapes to run in a booth at bridal shows. They'll also give you a letter to send to couples whose engagement is announced in the newspaper.

Miller's approach is not as structured. "I never turn down a job, even if I know that I can't do it or don't have the equipment. I'd rather accept the job and then subcontract to someone else. That way the customer keeps coming back to me."

Miller has both consumer and commercial accounts. "I tape everything short of commercial TV: legal depositions, real-estate property, sports, graduations, even a video yearbook. I also do a lot of industrial work, like training tapes. For sales promotions, I'll videotape a company's products for the salesman to show customers on the road."

The graphics capabilities of his Amiga make it easy to put titles and credits on tape. "With the Amiga, I can digitize the image of a business logo into the computer, enhance it, clean it up, and put it right on the videotape. Most businesses are impressed with the product, and their satisfaction gets me more customers. Actually, I usually get three new customers from every job I do, just from word of mouth. It has been easy to turn a very good profit." Other new business comes from the franchisor, through direct-mail marketing, and the yellow pages.

Kern County helped Virgil Miller retrain for a new livelihood. For an investment of $13,950, the county certainly got its money's worth.

SNAPSHOT

Virgil Miller

FRANCHISE: Video Memories—local franchise name of Video Data Services, a national videotaping service

RESIDENCE: Bakersfield, California

INITIAL INVESTMENT: $13,950 in 1987

GROSS INCOME: $100,000 expected in 1989

EQUIPMENT: Amiga 1000, 2MB RAM Card, Rainbow Star dot-matrix printer, two-line telephone, five video cameras, Digital Creations SuperGen (for mixing computer and video signals), NewTek DigiView (for digitizing images)

SOFTWARE: WordPerfect, Deluxe Paint II, DigiView, ProVideo Plus

RX FOR SUCCESS: Never say no. "I never turn down a job, even if I know that I can't do it or don't have the equipment. I'd rather accept the job and then subcontract to someone else. That way the customer keeps coming back to me."



PHOTOGRAPH BY MARK MILLER

Virgil Miller built on his interest in videotaping and computers when he began his Video Memories franchise. His wife, Kim, operates a video camera part-time.

Business and Personal Services

Women are going into business at one and a half times the rate of men, according to the Small Business Administration (S.B.A.). By the end of the century, the S.B.A. predicts that 40 percent of all self-employed individuals will be women.

Not everyone is ready to start a business independently, however. A franchise can show people the ropes, give ongoing support, and offer a proven method of doing business. Susan Kezios, president and founder of Chicago-based Women in Franchising (W.I.F.), believes that too many women are unaware of franchising. She's hoping to change that, bringing women and franchises together with W.I.F.'s "Franchising for Women" seminar series.

Kezios predicts that women will dominate the franchise industry in education and personal development, employment and personnel services, and books and arts services—all business and personal services. "These will probably be the most explosive groups in franchising in the next 10 years."

W.I.F. surveys the industry yearly and ranks franchises in four categories: percentage of female ownership, percentage of women at the vice-president level or higher, financial assistance from the franchisor, and if the franchisor has a women's advisory board or family resource association. W.I.F. ranks the networking organization American Business Associates (A.B.A.) as one of the best opportunities for women. It is among the few franchise companies in the United States whose outlets are 100 percent female owned.

American Business Associates is a networking business that brings businesspeople together to share marketing leads and information. Each group of networkers, called a council, consists of 20 to 40 people in noncompeting fields. The councils meet twice a month to swap leads. The payoff to each council member is a 10 to 30 percent annual increase in business.

Terri Youngs worked for A.B.A. for several years before purchasing a franchise in late 1987. For $25,000, she bought training and support from the franchisor.

"My most important business tool is my Macintosh SE," says Youngs. "With Microsoft *Works*, I can keep track of individual clients and accounts; use the spreadsheet to figure income, expenses, and taxes; and create attractive invitations and letters. All paperwork for the council is produced on the computer. It couldn't be done any other way.

"It's great that I can run a business with just a computer, printer, and copier. These three pieces of equipment let me work at my convenience. I never have to dash out to make copies or anything." Youngs plans to purchase an accounting program so she can do her own bookkeeping and hopes to add a fax machine to her home-office setup.

Youngs does most of her work from her home office—calling members to remind them of meetings or to discuss topics from previous meetings, lining up speakers for future meetings, and soliciting new members by cold-calling companies and inviting representatives to attend council meetings. Her telephone work is so important to her business that she installed mirrors on the wall behind her desk to remind herself to smile when she talks.

Youngs currently conducts four separate councils made up of representatives from small to medium-size businesses. Of the 20 to 30 members in each council, Youngs estimates that one-third are company presidents, one-third are financial professionals, and one-third are sales representatives. Membership fees are $1,000 per company.

The first year in business she grossed more than $50,000, and this year she may double that. "For the amount of freedom and flexibility I get, the income is great. This business allows me to plan work around my family instead of the other way around. I'm only away from home a few hours a week to run meetings, and those rarely conflict with my kids' school activities."

Youngs also likes the fact that she is in contact with so many businesspeople. "From running the council, I now know what bankers, lawyers, and CPAs do. It's been like earning an MBA without going to school. If I ever want to change businesses in the future, I feel I now have a good foundation for choosing the right one."

SNAPSHOT

Terri Youngs

FRANCHISE: American Business Associates—networking business

RESIDENCE: Holmdel, New Jersey

INITIAL INVESTMENT: $25,000 in 1987

GROSS INCOME: $80,000 expected in 1989

EQUIPMENT: Macintosh SE with 20MB hard-disk drive, ImageWriter II, Minolta personal copier, multiline phone

SOFTWARE: Microsoft *Works*

RX FOR SUCCESS: "An articulate delivery and corporate appearance."



To run her networking franchise effectively, Terri Youngs needs a professional appearance and telephone manner. The mirror helps her project a cheery attitude.

PHOTOGRAPH BY STEVEN KANE

BEST NICHE

Children's Products and Services



Reginald Jackson (left) and his part-time employees, Renee Riley and Eric Shack, are on their way to a day-care center to photograph and measure kids for Ident-A-Kid cards.

PHOTOGRAPH BY HOWARD GENSER

The number of dual-income couples with children has grown significantly since 1980, and so has their buying power. As the baby boomers approach their peak earning years, consumer spending is rising and manufacturers are tailoring their products and services to tap this expanding segment of the market. This means that these working parents are ready and willing to spend a lot of money on their kids. Ident-A-Kid is one of the best new entries in the children's products and services category.

Reginald "Reggie" Jackson landed a job with the Internal Revenue Service when he graduated from college two years ago. The job paid well, but being a collector was stressful, and Jackson was anything but the neighborhood hero. He had majored in business administration in college and figured that whatever knowledge he gained from the experience would come in handy when he did what he really wanted to do—go into business for himself. After looking at a lot of possibilities, Jackson found something that jumped right out at him and made him say, "This is the one."

It was a brand new franchise called Ident-A-Kid, based in his home state of Florida.

SNAPSHOT

Reginald Jackson

FRANCHISE: Ident-A-Kid

RESIDENCE: Jacksonville, Florida

INITIAL INVESTMENT: $10,000 in 1988

GROSS INCOME: $25,000 expected in 1989

EQUIPMENT: Amstrad PC 1512 DD, Panasonic KX-P 1080i printer, laminating machine, photography equipment

SOFTWARE: PFS: Professional Write, Instant Pages

RX FOR SUCCESS: Have a positive attitude. "Because I'm enthusiastic about my product, it's easy to sell."

Ident-A-Kid provides credit-card-sized identification cards for parents to carry, bearing a photograph, fingerprints, weight, measurements, and other identifying information about their child. The cards sell for $3 to $5 each, depending on the quantity purchased.

"It took me eight months to put together the money to buy my franchise," Jackson says, "but I wanted it that badly." For his $10,000, Jackson got a complete system, including an Amstrad computer, software, Panasonic printer, laminating machine, photography equipment, and training.

"I knew when I first looked into this that the marketing potential was there," says Jackson, "because there wasn't much competition. The hardest part was laying the groundwork, meeting principals and PTA presidents and giving them a first presentation. About 75 percent of the people who see my product agree to purchase the Ident-A-Kid cards for their kids."

Jackson takes the photos and gathers all the necessary data at the schools, then returns home to produce the cards, a process that takes about four days.

Starting part-time, Jackson worked about two hours a day while still working for the IRS. Even part-time he was earning more than he did at his full-time job. "It was hard to get motivated to go to work, so I quit." Now he works full-time and says it will get even better as time goes on because in this repeat business, customers usually ask him to come back next year.

Still, the best part of this franchise, according to Jackson, is not the money. "This is more than just a business. I get the sense that I am doing something for my community, not just making a buck. I feel good about providing a much-needed service."

QUESTIONS TO ASK

Before Buying a Franchise

Before deciding if a particular franchise is right for you, weigh its strengths and weaknesses. The Uniform Franchise Offering Circular (U.F.O.C.) disclosure document will be the foundation of your research. Federal law requires all franchisors to provide potential franchisees with the U.F.O.C. before any legal commitments are made. Each U.F.O.C. should contain the franchisor's full financial disclosure, background information on the key executives, all costs required to start and operate the business, the responsibilities you and the franchisor would share, and a list of franchisees, including addresses and phone numbers. Even if you are satisfied with the U.F.O.C. information, there are other things to consider.

Below is list of other information sources and a checklist of questions to ask yourself and the franchisor in order to make an informed buying decision.

WHERE TO GET ANSWERS

1. Current Franchisees. Check out more than one franchise in your area of interest so that you have a basis for comparison. And contact as many franchisees as possible to find out if they're satisfied with their businesses and the support they're getting from the franchisor. Talk to them about their earnings. Ask if they find the U.F.O.C. accurate.

2. References. Check the company's reputation and credit rating with the Better Business Bureau, International Franchise Association, and associations within the chosen industry.

3. Your professional team. Consult a franchise lawyer, accountant, and business advisor for a review of the U.F.O.C., the franchise agreement, and any other contracts you're asked to sign. Make sure you understand the legalities before signing. Have the accountant help you do some tax planning and one- to five-year financial projections. Work with the local economic-development council or university to determine sales potential in your area through market research. Get valuable industry statistics not included in the U.F.O.C. from trade associations.

QUESTIONS TO ASK YOURSELF

1. Do I have the necessary background to succeed in this field? Even though most franchisors offer complete training programs and require little or no experience, you should be cautious about tackling a field you know nothing about. Consider your own interests and skills when selecting a franchise.

2. Am I financially prepared to operate this franchise until it turns a profit? A good franchisor won't let you start a business unless you have enough operating capital to cover expenses for the first three to six months.

3. Am I going into this business because I think it will make a lot of money or because I am genuinely enthusiastic about the industry? Just as with any other business, a franchise requires hard work. Success will be easier if you enjoy the work.

4. Are the franchise fees justified? Are royalties in line with the potential profits and sales? Your accountant can help you determine if the fees are realistic, but you should also ask current franchisees if they feel they're getting their money's worth from the company. Ask them what kind of support they get in return for the royalties they pay.

5. Am I being pressured to rush my decision? This is a red flag signaling a company more interested in selling franchises than developing strong franchisees.

6. Is there a proven market? Does the service meet local demand? A good franchisor will help you determine if the demographics of your region indicate market potential. Many will even do the research for you.

7. What is the competition? Does your franchise offer a new twist or target a slightly different market? Investigate similar businesses in your area to find out how they're doing and if they think there are untapped markets.

8. Am I good at following rules? If you are a freewheeler, you may feel confined by the guidelines that a franchisor imposes to maintain a consistent company image.

QUESTIONS FOR THE FRANCHISOR

After your initial research, you will want to meet with a representative of the franchisor to discuss details. This meeting will also give you and the franchisor a chance to interview and get impressions of each other. First, find out whom you're talking to. If the sales pitch is given by a company official or even a sales rep employed by the company, chances are they will have a sincere interest in finding the right people to operate their franchises. If you are dealing with a franchise broker, insist on speaking to a company employee before you sign anything or shell out any money. And make sure you are satisfied with their answers to the following questions:

1. How long has the franchisor been in the industry and how well do the executives know it? When you buy a franchise, you are buying the franchisor's experience. Time often parallels experience, but more important is how well the key executives know the industry. A young company could be run by a pro.

2. How long has the firm offered franchises? How many franchises are there? If you are one of the first franchisees for a firm, there is more risk involved, but there may also be some advantages. For one, fees tend to go up rapidly once a franchising system is established. Buying into a franchise early may save you a substantial amount of money.

3. Does the firm seem interested in a long-term relationship or will its interest end with the initial fee? Be clear about the type of training and support you can expect from the company.

4. Is the franchisor concerned with your background and abilities? A good franchisor screens candidates. You will have to fill out a questionnaire and an application when you ask to review the U.F.O.C.

5. Are you required to purchase supplies from the franchisor? If so, are the prices competitive? If not, are there other suppliers available? The franchisor should not be making money from selling supplies. In fact, franchisees often get wholesale discounts. You usually have the option to buy your supplies from the franchisor or from another source, but there may not be another supplier in your area, and the franchisor may have to approve supplies purchased elsewhere.

6. Are there other franchisees in your territory? You may or may not have exclusive rights to your region.

7. What are the terms covering renewal rights? Can you sell, trade, or convert your franchise? Franchise agreements can last anywhere from 10 to 25 years. Find out if you have automatic renewal rights, if there is a fee to renew, or if the company specifies any other criteria for renewal. Similarly, ask about conditions for selling your franchise to someone else or converting the franchise into an independent business.

8. Who is responsible for warranties and guarantees? Sometimes your work will be guaranteed by the company. However, you may have to guarantee your work yourself.

RESOURCES

International Franchise Association, 1350 New York Avenue, NW, Suite 900, Washington, DC 20005; (202) 628-8000.

Women in Franchising, 175 North Harbor Drive, Suite 1311, Chicago, IL 60601; (312) 819-0600.

A GUIDE TO

50 Franchises You Can Run from Home

According to the Department of Commerce, less than five percent of franchised outlets fail or are discontinued each year. In fact, buying a franchise may be the best way to get some solid business training for a career that can be managed right from your home office. And franchises can neutralize the two main obstacles to succeeding in business: no access to capital and no ongoing managerial assistance. They often offer company financing. And comprehensive training and ongoing support are the essence of a franchise. Although franchises provide their franchisees with some training, you will probably hire people to perform any highly specialized services for your business.

The franchise fees for the businesses listed below range from free to $60,000. Besides the experience and training, your money often buys equipment, custom-designed software, a name backed with advertising materials, and a proven distribution system. In addition to the franchise fee, there are start-up costs, which usually cover expenses for the first few months until your business turns a profit. If you already have a well-equipped home office, you may require less money to get started. Once in business, franchisees pay a royalty on earnings to the parent company in exchange for updated market research, training, advertising materials, and other tools of the trade. Royalties are usually a percentage of monthly income, and advertising royalties pay for corporate backup and public relations.

If you see a business opportunity that interests you, keep in mind that the decision to purchase a franchise requires careful research. This guide is meant only to give you an idea of what's available and where to get more information.

BUSINESS SERVICES

American Advertising Distributors
P.O. Box AAD 16964, Mesa, AZ 85211; (602) 964-9393
Description: Full-service direct-mail advertising for small to medium-size businesses.
Experience Required: Sales or marketing
Year Business Began: 1976
Year Franchising Began: 1977
Number of Franchises: 108
Minimum Start-Up Costs: $10,000 (includes 4 weeks training, sales and promotional materials, business cards, contracts, etc.)
Franchise Fee: $19,500–$60,000 (depends on number of households in your territory)
Royalty: Based on mailing region
Advertising Royalty: None
Financing Available: None

American Business Associates
475 Park Ave. S., 16th Floor, New York, NY 10016; (212) 689-2834
Description: A formalized, networking organization established for small-business owners to exchange sales leads and market information. Members are in non-competing businesses.
Experience Required: None
Year Business Began: 1983
Year Franchising Began: 1986
Number of Franchises: 5
Minimum Start-Up Costs: $10,000 (includes working capital and office equipment)
Franchise Fee: $25,000 (includes 8-day hands-on training program with supervised networking sessions)
Royalty: 10%
Advertising Royalty: 2%
Financing Available: Over an 18-month period in 3 equal installments

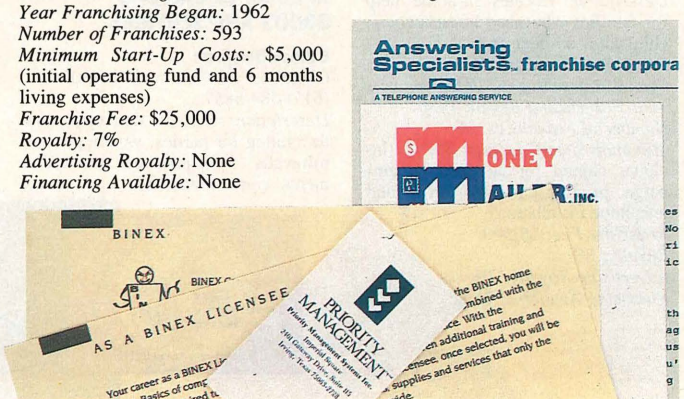
Answering Specialists
119 West Doty Ave., Summerville, SC 29483; (803) 724-6300
Description: Telephone-answering service that provides personalized messages and makes appointments for businesses that rely heavily on customer contact.
Experience Required: None
Year Business Began: 1972
Year Franchising Began: 1988
Number of Franchises: None
Minimum Start-Up Costs: Up to $20,000 (includes payroll, equipment leasing, office space, telephone, etc.)
Franchise Fee: $7,500–$18,500
Royalty: 4%–7% (depends on volume of gross receipts)
Advertising Royalty: 1%
Financing Available: None

BINEX-Automated Business Systems, Inc.
4441 Auburn Blvd., #E, Sacramento, CA 95841; (916) 483-8080
Description: Consulting, computerized accounting, financial planning, and tax preparation for small businesses.
Experience Required: Bookkeeping or sales
Year Business Began: 1965
Year Franchising Began: 1968
Number of Franchises: 60
Minimum Start-Up Costs: $11,500 (includes licensee fee, training, and software)
Franchise Fee: None
Royalty: $125 per year
Advertising Royalty: None
Financing Available: None

General Business Services, Inc.
20271 Goldenrod Ln., Germantown, MD 20874; (301) 428-1040
Description: Offers a range of financial-planning services to small businesses, including tax planning and financial management.
Experience Required: None
Year Business Began: 1962
Year Franchising Began: 1962
Number of Franchises: 593
Minimum Start-Up Costs: $5,000 (initial operating fund and 6 months living expenses)
Franchise Fee: $25,000
Royalty: 7%
Advertising Royalty: None
Financing Available: None

Money Mailer
15472 Chemical Ln., Huntington Beach, CA 92649; (714) 898-9111
Description: Cooperative direct-mail advertising for the small-business community.
Experience Required: None
Year Business Began: 1979
Year Franchising Began: 1980
Number of Franchises: 203
Minimum Start-Up Costs: $10,000 (living and business expenses; Macintosh computer and specialized software additional)
Franchise Fee: $20,000–$30,000 (depends on size of territory)
Royalty: 10%
Advertising Royalty: None
Financing Available: Upon approval

Priority Management Systems
2401 Gateway Dr., #115, Irving, TX 75063; (214) 550-1981
Description: Management-training services designed to help middle- and upper-level managers establish business priorities, develop organizational and managerial skills, plan projects and meetings, and manage details and time.
Experience Required: Management
Year Business Began: 1984
Year Franchising Began: 1984
Number of Franchises: 173
Minimum Start-Up Costs: $7,000–$12,000 (includes training, inventory, and telephone-answering service)
Franchise Fee: $27,500
Royalty: 9%
Advertising Royalty: 1%
Financing Available: None



HOME AND COMMERCIAL PROPERTY IMPROVEMENT

Bathcrest, Inc.
2425 S. Progress Dr., Salt Lake City, UT 84119; (801) 972-1110
Description: Porcelain resurfacing for residential and commercial properties.
Experience Required: None
Year Business Began: 1979
Year Franchising Began: 1985
Number of Franchises: 140
Minimum Start-Up Costs: $21,000 (includes training, equipment, and supplies)
Franchise Fee: $3,500
Royalty: Franchisee must buy products from Bathcrest.
Advertising Royalty: None
Financing Available: None

Decorating Den
4630 Montgomery Ave., Bethesda, MD 20814; (301) 652-6393
Description: Residential and commercial interior decorating with a shop-at-home service.
Experience Required: None
Year Business Began: 1969
Year Franchising Began: 1970
Number of Franchises: 800
Minimum Start-Up Costs: $8,000 (includes van leasing, advertising, flyers, printers, and insurance)
Franchise Fee: $6,900–$18,900 (depends on population of territory)
Royalty: 6%–11% (depends on retail sales volume)
Advertising Royalty: Up to 2% (depends on volume)
Financing Available: None

Homewatch
2865 S. Colorado Blvd., Denver, CO 80222; (303) 758-7290
Description: Services include housesitting (24-hour or nightly); nonmedical companions (to cook meals, do light housekeeping, run errands); a checking service (to take in mail and care for pets); and a handyman service (for odd jobs and repairs).
Experience Required: Married couple 45–60 years old. Full-time commitment required of one spouse.

Year Business Began: 1973
Year Franchising Began: 1984
Number of Franchises: 23 in United States; 1 in Canada
Minimum Start-Up Costs: $15,000 (includes operating expenses and advertising for one year)
Franchise Fee: $8,500–$13,500 (depends on population of territory)
Royalty: 5%
Advertising Royalty: 1%
Financing Available: For increasing territory

Langenwalter Carpet Dyeing
4410 E. La Palma, Anaheim, CA 92807; (714) 528-7610
Description: Recolors and restores carpets for apartments, hotels, and homes.
Experience Required: None
Year Business Began: 1972
Year Franchising Began: 1981
Number of Franchises: 120
Minimum Start-Up Costs: $3,000 (includes minimum living expenses)
Franchise Fee: $16,500
Royalty: None
Advertising Royalty: $100 per month
Financing Available: On a case-by-case basis.

Perma-Glaze Inc.
7310 E. 22nd St., Suite 167, Tucson, AZ 85710; (602) 885-7397
Description: Refinishing and restoration for worn and damaged porcelain, fiberglass, acrylic, and marble fixtures.
Experience Required: None
Year Business Began: 1978
Year Franchising Began: 1981
Number of Franchises: 64
Minimum Start-Up Costs: $2,000 (for advertising and promotion)
Franchise Fee: $19,500
Royalty: None
Advertising Royalty: None
Financing Available: None

Worldwide Refinishing Systems
508 Lake Air Dr., Waco, TX 76710; (817) 776-4701
Description: Bathroom and kitchen fixture refinishing and repairing on location. Also antique fixture refurbishing.
Experience Required: None
Year Business Began: 1970 (as Gnu Tub)
Year Franchising Began: 1971
Number of Franchises: 70
Minimum Start-Up Costs: $3,500 (includes equipment)
Franchise Fee: $6,950 (includes training)
Royalty: 5%
Advertising Royalty: None
Financing Available: On a case-by-case basis

CHILDREN'S PRODUCTS AND SERVICES

Computertots
Village Centre, P.O. Box 408, Great Falls, VA 22066; (703) 759-2556
Description: Computer classes for preschool children offered on-site at private preschools and day-care centers. Teachers travel from school to school. There is also a program for children ages 6 through 10 called Computer Explorers.
Experience Required: None
Year Business Began: 1983
Year Franchising Began: 1988
Number of Franchises: 1
Minimum Start-Up Costs: Up to $20,000 (includes initial and follow-up training, 22 software packages, curriculum materials, brochures, and promotional materials)
Franchise Fee: $12,000
Royalty: 6%
Advertising Royalty: 1% (optional)
Financing Available: None

Ident-A-Kid Services of America, Inc.
8430 Sixth St. N., St. Petersburg, FL 33702; (813) 577-4646
Description: Laminated child identification cards marketed through schools. Designed to give parents a photograph and record of their child's weight, measurements, and fingerprints.
Experience Required: None
Year Business Began: 1986
Year Franchising Began: 1987
Number of Franchises: 32
Minimum Start-Up Costs: Included in fee
Franchise Fee: $12,500 (includes start-up costs, equipment, and all initial supplies)
Royalty: None
Advertising Royalty: None
Financing Available: None; but company gives guidance in obtaining financing.

Kinderdance International, Inc.
P.O. Box 510881, Melbourne Beach, FL 32951; (407) 723-1595
Description: Educational dance and motor-development program for preschoolers, taught primarily in child-care centers. Ages 2 through 10 learn basics of ballet, tap, acrobatics, and modern dance as well as words, colors, shapes, and forms.
Experience Required: None
Year Business Began: 1979
Year Franchising Began: 1985
Number of Franchises: 14
Minimum Start-Up Costs: $2,000 (includes transportation and lodging for 10-day training program, start-up supplies, bookkeeping, signs, operational supplies, etc.)
Franchise Fee: $5,000
Royalty: 10%–15% (decreases with purchase of multiple franchises)
Advertising Royalty: 3%
Financing Available: None

TGIF Peopleworks (Thank Goodness I've Found . . .)
P.O. Box 828, Old Lyme, CT 06371; (203) 434-1262
Description: Locates in-home help for families who need housekeepers, child care, or elder care.
Experience Required: None
Year Business Began: 1982
Year Franchising Began: 1986
Number of Franchises: 16
Minimum Start-Up Costs: $4,700 (includes capital for advertising campaign, printing costs for forms, and telephone installation)
Franchise Fee: $8,500
Royalty: 8%
Advertising Royalty: 2%
Financing Available: None

HEALTH AND BEAUTY

Aloette Cosmetics
345 Lancaster Ave., Malvern, PA 19355; (215) 644-8200
Description: Direct sales of skin-care products and cosmetics through home shows. Beauty consultants execute sales on behalf of franchisees, who are independent contractors.
Experience Required: None
Year Business Began: 1978
Year Franchising Began: 1978
Number of Franchises: 110
Minimum Start-Up Costs: $25,000 ($10,000 for initial franchise-fee payment; $6,000 for purchase of goods; $9,000 for operating capital)
Franchise Fee: $60,000
Royalty: 5%
Advertising Royalty: None
Financing Available: Franchisee pays only $10,000 of fee. Company finances the remaining $50,000.

Better Birth Foundation
733 Main St., Stone Mountain, GA 30083: (404) 469-8870
Description: Prenatal education service providing an entire curriculum, beginning with pre-pregnancy through the post-partum period. Also provided are certification for childbirth educators to teach the program and training for the business manager.
Experience Required: None
Year Business Began: 1981
Year Franchising Began: 1983
Number of Franchises: 8 (5 company owned, 3 private)
Minimum Start-Up Costs: Up to $3,500 (includes answering machine, typewriter, computer, filing cabinets, etc.)
Franchise Fee: $18,500
Royalty: 6%
Advertising Royalty: 1%
Financing Available: None

Respond First Aid Systems
P.O. Box 39925, Denver, CO 80239; (303) 371-6800
Description: First-aid training, sales, and resupply of first-aid kits and cabinets from an on-site van.
Experience Required: Sales and marketing
Year Business Began: 1979
Year Franchising Began: 1984
Number of Franchises: 36
Minimum Start-Up Costs: $25,000 (includes inventory, expenses, and working capital)
Franchise Fee: None
Royalty: None
Advertising Royalty: None
Financing Available: None

SPECIAL OCCASIONS GOODS AND SERVICES

Balloon Bouquets
69 Kilburn Rd., Belmont, MA 02178; (617) 484-5857
Description: Balloon deliveries and decorating for parties, weddings, bar mitzvahs, new-product announcements, conventions, etc.
Experience Required: None
Year Business Began: 1977
Year Franchising Began: 1977
Number of Franchises: 18
Minimum Start-Up Costs: $5,000–$10,000 (includes advertising and delivery vehicle)
Franchise Fee: $5,000–$15,000 (depends on region)
Royalty: 5%
Advertising Royalty: 3%
Financing Available: None

Dekra-Lite
17945 Sky Park Circle, Irvine, CA 92714; (714) 261-9191
Description: Exterior holiday lighting and decoration for commercial and residential buildings. Includes design, installation, and removal of lights. Lightscaping, Inc. is an additional service for exterior landscape lighting. Dekra-Grafiks sells figurines for different holidays.
Experience Required: None
Year Business Began: 1986
Year Franchising Began: 1988
Number of Franchises: 22
Minimum Start-Up Costs: $200–$15,000 (includes brochures, booklets, and samples and depends on scope of offerings)
Franchise Fee: $9,500 (includes start-up kit and 5-day training program in business procedures, lighting installations, etc.)
Royalty: 5%
Advertising Royalty: 2%
Financing Available: None

Omelette Queen Caterers
6505 Sanzo Rd., Suite F, Baltimore, MD 21209; (301) 484-3179
Description: A low-cost, high-quality catering service that brings portable stoves and trained chefs to parties. All food is prepared on the premises using fresh ingredients for omelettes, hot and cold hors d'oeuvres, Italian dishes, assorted salads, fruit and vegetable displays, gourmet pastries, and desserts.
Experience Required: None
Year Business Began: 1976
Year Franchising Began: 1989
Number of Franchises: None
Minimum Start-Up Costs: $3,000 (includes advertising, petty cash, salaries, and initial food)
Franchise Fee: $15,000
Royalty: 5%
Advertising Royalty: 2%
Financing Available: None

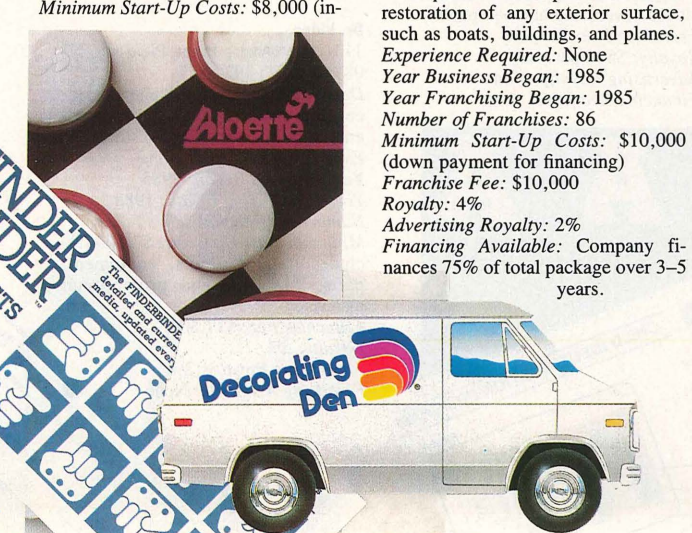


Stork News
5075 Morganton Rd., Suite 12A, Fayetteville, NC 28314; (919) 868-3065
Description: Newborn-announcement services and products such as storks for front yards. Retail items such as cards, christening clothes, and party supplies.
Experience Required: None
Year Business Began: 1984
Year Franchising Began: 1985
Number of Franchises: 102
Minimum Start-Up Costs: $2,000 (includes supplies, tools, advertising, and printing)
Franchise Fee: $5,000–$10,000 (depends on demographics)
Royalty: 2%
Advertising Royalty: None
Financing Available: None

Tote-A-Shower, Inc.
112 S.E. Logan St., P.O. Box 325, Emden, IL 62635; (217) 376-3391
Description: Special-occasion planner providing complete party services and outdoor greeting cards (large yard signs) for birthdays, baby showers, and bridal showers.
Experience Required: None
Year Business Began: 1984
Year Franchising Began: 1985
Number of Franchises: 16
Minimum Start-Up Costs: $1,500 (includes party supplies, cards, and accessories)
Franchise Fee: $500
Royalty: 6%–10% (decreases as business increases)
Advertising Royalty: None
Financing Available: None

PUBLISHING

Finderbinder & Sourcebook Directories
4679 Vista St., San Diego, CA 92116; (619) 284-1145
Description: Publishes two types of media directories designed as add-on profit centers for existing small businesses in the public relations, communications, advertising, consulting, or business-management fields. *Finderbinder* is a local news media directory. *Sourcebook* is a directory of clubs, groups, and associations in a city, state, or region.
Experience Required: Must have an established business
Year Business Began: 1974
Year Franchising Began: 1978
Number of Franchises: 18
Minimum Start-Up Costs: $8,000 (includes printing, binders, and research staff)
Franchise Fee: $1,000
Royalty: 5%–15% (decreases as sales increase)
Advertising Royalty: None
Financing Available: None



Bingo Bugle Newspaper
7522 20th Ave. NE, Seattle, WA 98115; (206) 527-4958
Description: Monthly publication for bingo players. The 8-page tabloid is given away at bingo halls and convenience stores. It includes bingo and astrology columns and crossword puzzles.
Experience Required: None
Year Business Began: 1982
Year Franchising Began: 1983
Number of Franchises: 41
Minimum Start-Up Costs: $1,000–$2000 (includes typewriter, telephone, printing, etc.)
Franchise Fee: $1,500–$6,000 (depends on territory's population and number of licensed bingo games, and county and state laws governing bingo)
Royalty: 10%
Advertising Royalty: None
Financing Available: None

Homes & Land Publishing Corporation
2365 Centerville Rd., Tallahassee, FL 32308; (904) 385-3310
Description: A regional real-estate advertising magazine with pictures of homes offered by brokers in a particular community.
Experience Required: Sales experience preferred
Year Business Began: 1973
Year Franchising Began: 1984
Number of Franchises: 225
Minimum Start-Up Costs: $7,700 (includes training and materials)
Franchise Fee: $1,500–$7,500 (varies with quality of publication—color or black-and-white, text or graphics)
Royalty: 6%–16% (depends on quality of publication)
Advertising Royalty: None
Financing Available: None

RESIDENTIAL AND COMMERCIAL CLEANING

Americlean Mobile Power Wash and Restoration, Inc.
943 Taft Vineland Rd., Orlando, FL 32824; (407) 855-2215
Description: Mobile power wash and restoration of any exterior surface, such as boats, buildings, and planes.
Experience Required: None
Year Business Began: 1985
Year Franchising Began: 1985
Number of Franchises: 86
Minimum Start-Up Costs: $10,000 (down payment for financing)
Franchise Fee: $10,000
Royalty: 4%
Advertising Royalty: 2%
Financing Available: Company finances 75% of total package over 3–5 years.

Classy Maids
1180 S. Spring Centre Blvd., #115, Altamonte Springs, FL 32714; (407) 862-6868
Description: Residential and commercial cleaning service specializing in single-family homes, apartments, condominiums, and office spaces.
Experience Required: None
Year Business Began: 1980
Year Franchising Began: 1985
Number of Franchises: 31
Minimum Start-Up Costs: $4,000 (includes operating capital)
Franchise Fee: $5,900–$9,500 (includes cleaning supplies, equipment, stationery, and maids' uniforms; depends on population of territory)
Royalty: 6%
Advertising Royalty: None
Financing Available: For 50% of fee over 4 years

Dial-A-Maid
753 1/2 Harry L. Dr., Johnson City, NY 13790; (607) 798-8871
Description: Carpet, upholstery, and window cleaning for homes and small offices.
Experience Required: None
Year Business Began: 1983
Year Franchising Began: 1986
Number of Franchises: 4
Minimum Start-Up Costs: $10,500 (includes equipment, supplies, and advertising)
Franchise Fee: $5,500–$9,500 (depends on population of territory)
Royalty: 6%
Advertising Royalty: 2%
Financing Available: Up to 50% of franchise fee

The Maids, International
4820 Dodge St., Omaha, NE 68132; (402) 558-8797
Description: Residential cleaning service by a team of professional maids.
Experience Required: None
Year Business Began: 1979
Year Franchising Began: 1981
Number of Franchises: 220
Minimum Start-Up Costs: $25,000 (includes 6–8 months living expenses, cars, advertising, and salaries)
Franchise Fee: $15,900 (includes logo, services, and equipment package)
Royalty: 7% (decreases as volume increases)
Advertising Royalty: 2%
Financing Available: On a case-by-case basis

Merry Maids
11117 Mill Valley Rd., Omaha, NE 68154; (402) 498-0331
Description: Residential cleaning service on a biweekly, weekly, or one-time-only basis for homes, apartments, and condominiums. Also available in the United Kingdom and Canada.
Experience Required: None
Year Business Began: 1980
Year Franchising Began: 1980
Number of Franchises: 410
Minimum Start-Up Costs: $10,000–$12,000 (includes insurance, marketing, computer, and printer)
Franchise Fee: $17,500
Royalty: 7%
Advertising Royalty: None
Financing Available: None

Molly Maid Inc.
3001 S. State St., #707, Ann Arbor, MI 48108; (313) 996-1555; (800) 289-4600
Description: Residential cleaning service providing regularly scheduled cleaning throughout America, Canada, Great Britain, Norway, Sweden, and France.
Experience Required: None
Year Business Began: 1978
Year Franchising Began: 1978
Number of Franchises: 371
Minimum Start-Up Costs: $8,000 (includes leasing of company car, liability insurance, and bonding)
Franchise Fee: $16,900
Royalty: 4%–8% (decreases as sales volume increases)
Advertising Royalty: 2%
Financing Available: Company will finance $12,500 over 2 years.

Knightriders, Inc.
33 Boston Post Rd. W., Marlboro, MA 01752; (508) 460-0148
Description: Restaurant cleaning service offered 7 days a week.
Experience Required: None
Year Business Began: 1978
Year Franchising Began: 1986
Number of Franchises: 14
Minimum Start-Up Costs: $1,500–$2,000 (includes initial operating expenses and payroll)
Franchise Fee: $25,000
Royalty: 9% on revenues up to $8,000 per month, 5% on revenues over $8,000 per month
Advertising Royalty: None
Financing Available: For $7,000 of franchise fee

Rug Doctor Pro
2788 N. Larkin Ave., Fresno, CA 93727; (209) 291-5511
Description: Carpet, upholstery, and drapery cleaning and water-damage restoration for commercial and residential clients.
Experience Required: None
Year Business Began: 1972
Year Franchising Began: 1986
Number of Franchises: 17
Minimum Start-Up Costs: $10,000–$20,000 (depends on equipment needed)
Franchise Fee: $5,000 minimum (depends on population of territory)
Royalty: 3%–6% (depends on gross volume per month)
Advertising Royalty: 2%
Financing Available: For 90% of equipment and up to 50% of franchise fee

ServiceMaster Residential/Commercial Services
2300 Warrenville Rd., Downers Grove, IL 60515; (312) 964-1300
Description: Professional residential and commercial cleaning and lawn-care services with more than 2 million customers worldwide.
Experience Required: None
Year Business Began: 1947
Year Franchising Began: 1952
Number of Franchises: 4,029

Minimum Start-Up Costs: Up to $10,000 (includes training, equipment, and supplies)
Franchise Fee: $6,000–$17,500 (case-by-case basis)
Royalty: 10%
Advertising Royalty: 1%
Financing Available: Up to 65% of total cost

Steamatic, Inc.
1601 109th St., Grand Prairie, TX 75050; (214) 647-1244
Description: Commercial and residential cleaning service that works mostly with insurance claims. Includes carpet, upholstery, drapery, electronics, and air-duct cleaning, as well as wood restoration and fire and flood repair.
Experience Required: None
Year Business Began: 1946
Year Franchising Began: 1968
Number of Franchises: 258
Minimum Start-Up Costs: $11,000–$25,000 (includes all operating expenses, equipment, office supplies, etc.)
Franchise Fee: $9,000–$15,000 (depends on population of territory)
Royalty: 3%–8% (depends on annual gross volume)
Advertising Royalty: None
Financing Available: For purchase of company's patented equipment over 5 years

FINANCIAL SERVICES

Broker One Discount Broker
230 E. Wheeling St., Lancaster, OH 43130; (614) 687-1511
Description: Brokerage firm that sells securities and commodities to investors.
Experience Required: Stockbroking experience preferred
Year Business Began: 1983
Year Franchising Began: 1987
Number of Franchises: 6
Minimum Start-Up Costs: Varies (costs include office rental, furniture, and quotation service)
Franchise Fee: $3,000–$30,000 (depends on population of territory)
Royalty: None
Advertising Royalty: None
Financing Available: None

HOME-INSPECTION AND REAL-ESTATE SERVICES

Building Inspector of America, Inc.
684 Main St., Wakefield, MA 01880; (617) 246-4215
Description: Prepurchase inspections of single-family and multifamily homes, condominiums, and commercial properties to warn potential buyers of problems in structure, foundations, and roofs.
Experience Required: None
Year Business Began: 1976
Year Franchising Began: 1985
Number of Franchises: 50
Minimum Start-Up Costs: $5,000–$8,500 (includes rent, software, office equipment, forms, and stationery)
Franchise Fee: $15,000 minimum
Royalty: 6%
Advertising Royalty: 3%
Financing Available: None

American Leak Detection
P.O. Box 1701, Palm Springs, CA 92262; (619) 320-9991
Description: Detects water, natural gas, and underground sewer leaks for homes and businesses.
Experience Required: None
Year Business Began: 1974
Year Franchising Began: 1984
Number of Franchises: 95
Minimum Start-Up Costs: $10,000 (includes truck leasing, telephone, and operating expenses)
Franchise Fee: $40,000 minimum (depends on population of territory)
Royalty: 8%–10% (decreases as gross monthly income increases)
Advertising Royalty: None
Financing Available: For 50% of franchise fee

HouseMaster of America
421 W. Union Ave., Bound Brook, NJ 08805; (201) 469-6565
Description: Inspects homes for potential buyers and reports on condition of central heating and cooling system, plumbing, electrical system, physical structure, roof, foundation, etc.
Experience Required: None
Year Business Began: 1971
Year Franchising Began: 1979
Number of Franchises: 108
Minimum Start-Up Costs: $10,000–$15,000 (includes rent, equipment, stationery, and promotional materials)
Franchise Fee: $17,000–$35,000 (depends on the number of owner-occupied homes in the territory)
Royalty: 6%
Advertising Royalty: 4%
Financing Available: None

National Tenant Network, Inc.
P.O. Box 1664, Lake Grove, OR 97035; (503) 635-1118
Description: Computerized tenant-screening service performed for residential landlords. Checks tenant histories, eviction records, collection information, credit, and bankruptcies.
Experience Required: None
Year Business Began: 1981
Year Franchising Began: 1985
Number of Franchises: 6
Minimum Start-Up Costs: $15,000 (includes computer hardware and software, training, and market research)
Franchise Fee: $4,000
Royalty: 8%–10% (varies by state)
Advertising Royalty: None
Financing Available: For 75% of start-up expenses

National Property Inspections
224 S. 108th Ave., #2, Omaha, NE 68154; (402) 333-9807
Description: Home-inspection service that checks everything from roof to foundation for potential buyers.
Experience Required: None
Year Business Began: 1982
Year Franchising Began: 1987
Number of Franchises: 12
Minimum Start-Up Costs: $5,000 (includes telephone, flyers, and insurance)
Franchise Fee: $14,000
Royalty: 8% (drops to 6% when revenues reach $100,000)
Advertising Royalty: 1%
Financing Available: With $10,000 down, company will finance additional $4,000 of franchise fee over 4 years.

PHOTOGRAPHIC PRODUCTS AND SERVICES

The Sports Section Photography, Inc.
4958 Hammermill Rd., Tucker, GA 30084; (404) 496-0696
Description: Youth sports photography. Franchisee takes pictures of youth sport groups and sends film to franchisor in Georgia for processing. Finished products include calendars, posters, keychains, etc.
Experience Required: None
Year Business Began: 1983
Year Franchising Began: 1984
Number of Franchises: 38
Minimum Start-Up Costs: $2,000
Franchise Fee: $25,000 (includes photographic equipment, promotional materials, and samples)
Royalty: None
Advertising Royalty: None
Financing Available: On a case-by-case basis

Video Data Services
24 Grove St., Pittsford, NY 14534; (716) 385-4773
Description: Video photography and tape-transfer service specializing in weddings, product demonstrations, sales demonstrations, legal depositions, conventions, and computer graphics. Also converts home, industrial, and commercial movies to videotape.
Experience Required: None
Year Business Began: 1980
Year Franchising Began: 1984
Number of Franchises: 220
Minimum Start-Up Costs: $2,000 (includes advertising and equipment)
Franchise Fee: $15,950
Royalty: $500 per year
Advertising Royalty: None
Financing Available: None



MISCELLANEOUS

Critter Care
P.O. Box 95003-143, Baton Rouge, LA 70895; (504) 273-3356
Description: In-home pet and plant care for out-of-town residents. Other services include switching lights on and off, mail and newspaper pickup, and rides to and from the airport.
Experience Required: None
Year Business Began: 1980
Year Franchising Began: 1984
Number of Franchises: 6
Minimum Start-Up Costs: $1,500 (includes telephone, advertising, and insurance)
Franchise Fee: $2,000–$8,750 (depends on population of territory)
Royalty: 5%
Advertising Royalty: 2%
Financing Available: Second half of franchise fee financed over first year.

Pet Nanny of America, Inc.
1000 Long Blvd., #9, Lansing, MI 48911; (517) 694-4400
Description: Professional in-home pet-care service for out-of-town pet owners.
Experience Required: None
Year Business Began: 1983
Year Franchising Began: 1985
Number of Franchises: 11
Minimum Start-Up Costs: $4,000 (includes insurance, yellow pages ad, telephone, advertising, and transportation)
Franchise Fee: $6,200
Royalty: 5%
Advertising Royalty: 2%
Financing Available: None

Sport It, Inc.
8960 Springbrook Dr. NW #150, Coon Rapids, MN 55433; (612) 784-0490
Description: Distributors of athletic equipment and apparel to schools, recreation leagues, and businesses (restaurants and factories).
Experience Required: None
Year Business Began: 1984
Year Franchising Began: 1984
Number of Franchises: 1,983
Minimum Start-Up Costs: Included in fee
Franchise Fee: $1,500 (includes training, manuals, catalogs, and forms)
Royalty: $25 per month
Advertising Royalty: None
Financing Available: None

Dr. Video
1131 Bay Ave., Point Pleasant, NJ 08742; (201) 892-8877
Description: VCR and Nintendo video-game repair and maintenance operating through retail video stores.
Experience Required: None
Year Business Began: 1985
Year Franchising Began: 1988
Number of Franchises: 7
Minimum Start-Up Costs: $7,500 (includes training, tools, equipment, parts, supplies, and promotional materials)
Franchise Fee: $17,500
Royalty: 5%
Advertising Royalty: 2%
Financing Available: None ■



The Barth Balance

How a Two-Business Couple Nurtures Three Children, a Video Production Firm, and an Insulation Company All Under One Roof

BY CAROLYN HURST

When Laurie Barth, founder of Magus Video Productions, answers her business phone, her enthusiasm for her work pours over the line. And why shouldn't it? Projected earnings for her video production company this year, the firm's first full year of operation, are $250,000.

Success is also no stranger to the businessman who works in the adjoining office. In just over two years, Laurie's husband, Jim, has built his business from a start-up home-insulation firm to a bustling company with three full-time employees. Barth Insulation Company fills an average of 25 contracts a month, charging between $1,000 and $3,000 to insulate a home.

That both young businesses are thriving is remarkable. That Jim and Laurie launched their businesses from home offices in suburban Chicago while raising three young children is even more remarkable.

"My work and my family are both very important to me," says Laurie. "There's no way I could work without my family's support and encouragement. And because I enjoy my work so much, I'm a happier, more stable and secure person. That attitude rubs off on my family."

THE BARTHS AS BUSINESSPEOPLE

Laurie became interested in video while in the midst of a successful real-estate career. Looking for an innovative way to promote a custom home builder she was representing, Laurie hired a producer to videotape her client's work. That producer is now her business partner.

Magus Video Productions specializes in "videography for business," creating both product and personnel-training videos for retailers; public-service announcements and commercials for cable and network TV; and promotional tapes for a furniture manufacturer, contractors, and other clients. The company also produces *Home Town Videos*, which represent communities and services that are available to people who are relocating. Currently marketing to large real-estate firms in northern Illinois, Laurie and her partner hope to market their business on a national scale.

The firm is also looking ahead to the day when a computerized video multiple-listing service will be used by real-estate agents nationwide—so instead of getting a printout of properties that meet a client's specifications, a real-estate agent and client could see videos of them on a computer. "The idea of using video to preview properties is a bit ahead of its time in the Midwest," admits Laurie. But as computer technology advances, linking a real-estate video to an agent's computer will be viable.

To assist with the growing company's work load, Laurie and her partner employ one part-time and two full-time employees. (Laurie's mother is the office manager.) The company uses a Tandy 3000 computer and an Okidata printer in the office. An Amiga 1000 and an Amiga 2000 are used in the adjoining production studio, along with a Brother and a Star Micronics printer. Laurie uses a variety of software to produce the videos, including

SNAPSHOT

Jim and Laurie Barth, Wauconda, Illinois

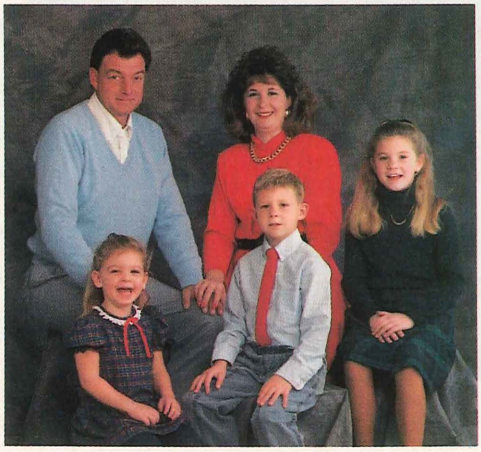
BUSINESSES: Magus Video Productions, est. 1988 (Laurie); Barth Insulation Co., Inc., est. 1986 (Jim)

EQUIPMENT: Tandy 3000, Amiga 1000, and Amiga 2000 computers; Okidata, Brother, and Star Micronics printers

SOFTWARE: *TV Text*, *TV Show*, *Digiview*, *WordPerfect*, *Aegis Animator*, *Aegis Images*, *PageSetter*, and 10 others

CHILDREN: Brittany, 9; Kellen, 7; Carly, 3

DAY-CARE CHOICES: Neighbors, preschool, relatives



CAROLYN HURST *wrote "It's All Relative" in the December 1988 issue of* HOME-OFFICE COMPUTING.

ILLUSTRATIONS BY MARCY GOLD

TV Text, *TV Show*, *Digiview*, *Aegis Animator*, *Aegis Images*, and *PageSetter*.

Laurie entered the real-estate business after the birth of her second child. "I took classes at night," she recalls, "often getting up as early as 2 a.m. to study." Jim watched the kids while she attended classes, as well as evenings and weekends, which Laurie devoted to her new career. When their oldest daughter, Brittany, entered school, Laurie stepped up her career. By the time their son, Kellen, entered kindergarten, she was working full-time as a real-estate agent—and she was pregnant. "I took four months off when Carly (now 3 years old) was born," she says.

Shortly after Carly's birth, Jim started his own home business. He employs three insulation installers and spends most of his day estimating the cost of jobs, talking to clients, and managing his business. When there's a lot of work to be done, he helps hang insulation.

"You have to be extremely organized." —Laurie Barth

Thanks to the flexibility of his home-based business and the nontraditional hours of the real-estate profession, the couple was able to continue working without having to make formal day-care arrangements for their children. When they needed extra help, they called on family members or a caring neighbor.

THE BARTHS AS PARENTS

That informal arrangement continued to work fairly well even after Laurie started her business. Her work filled most of the 9-to-5 day, and Jim was able to take up much of the slack with the children. When outside help was needed, the couple continued to turn to their family or their neighbor. "My father owns a resort on a lake so the kids never mind going to see him," Laurie says.

When Brittany, now 9, and 7-year-old Kellen get home from school at around 3 p.m., "one of us tries to get away from work to spend some time with them," Laurie says. "They're always excited and want to talk over their day." Once the kids are settled in, they do their homework or play upstairs while their parents finish out the workday. "If important clients are going to be in the office or we have meetings, I make arrange-

12 Tips for Your Baby's First Year

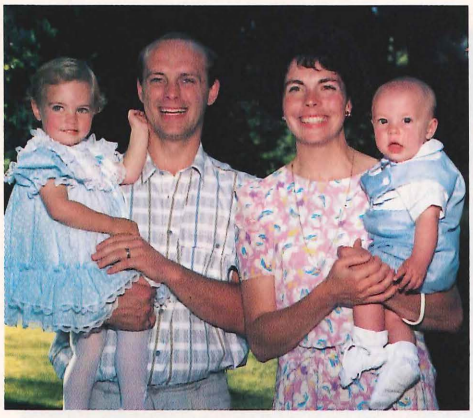
BY CAROLYN HURST

I'm exhausted! But I'm also happy. For the past three years, I've combined the challenges of working from home with those of raising my two children. Short of having a live-in nanny, it's the best available option: I'm able to spend a lot of time with my kids without giving up my career.

I have to admit, I was overconfident when my first child was born. After all, I'd been working at management level for several years. How tough could it be to work part-time from home while taking care of a newborn? Piece of cake! I found that, at times, it was a very, very big piece of cake. And when my second child arrived just 20 months later, I had to make some major adjustments just to keep my business afloat.

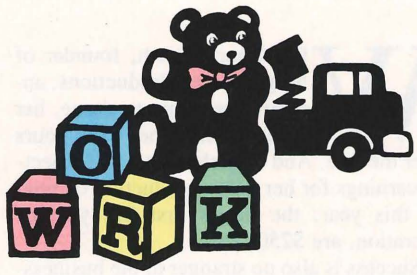
With each child, the first 12 months were the hardest. Even though I had been warned, I was unprepared for the constant changes. I thought once we settled into a routine, we'd keep that routine, but I soon realized that what worked for an immobile newborn who slept much of the day would not work for a curious, crawling 7-month-old. I also did not expect my second baby's inner clock to be so different from the first's. So the work schedule I had with Natalie, who slept through the night at 2 months and was on a consistent nap schedule, fell to pieces with Evan, who even at the age of 1, sometimes wakes me two or three times a night.

Through trial and error, a wonderful husband, and the support of other work-at-home parents, I've been able to maintain my sanity while nurturing my children and my business. The following tips should help you get off to a smooth start.



Author Carolyn Hurst with husband Steve Perry and children Natalie and Evan.

With each child, the first 12 months were the hardest. Even though I had been warned, I was unprepared for the constant changes the first year entailed.



BEFORE BABY ARRIVES . . .

1. Evaluate priorities. The arrival of a baby will bring unpredictable changes to your life. If you want your career to survive, you must prioritize; otherwise, you may find yourself devoting more time to laundry than to work. My family comes first, followed closely by my work. Furniture refinishing, cleaning the garage, and a host of other lower-ranking activities are on hold for now.

2. Set realistic goals. Try not to be unrealistic about how much you will be able to do immediately following the birth of your child. During the first few months, allow twice as much time as you would ordinarily need to complete a task.

3. Organize. Use this time to organize your work space so that it functions as efficiently as possible. Stock up on supplies, organize your files, get in the habit of scheduling meetings in advance. Try to complete any projects due within the first two months after the baby's birth, or at least bring them near completion.

4. Equip your office with time- and step-savers. In addition to an answering machine, a cordless telephone can be a working parent's best friend. It will allow you to field

ments for the kids to go to a sitter's or a friend's house after school,'' Laurie says. But, if the children have an after-school activity or program they want to attend, Laurie and Jim try not to let their work interfere.

Three-year-old Carly required different arrangements. Two days a week, Carly stays with the Barths' neighbor. She attends preschool two mornings a week and then spends those afternoons and Fridays with her 82-year-old great-grandmother.

''The relationship Carly and my grandmother have is wonderful,'' Laurie says. ''She gives Carly her undivided attention. That's something I'm not able to do. It also makes my grandmother feel needed. She is a big part of the success Jim and I have enjoyed.

''It's important to me that my children be with people who truly care about them,'' Laurie adds,''and that they not just be shuttled off to day care because it might be convenient for me.''

So far, only Brittany has shown an interest in her parents' work. ''She really likes to help, so I try to involve her whenever I can,'' says Laurie. Envelope stuffing and labeling are two of the tasks the 9-year-old enjoys.

THE REAL TRICK

Maintaining a balance between family and work is tricky. And there are times, Laurie admits, that her balance does teeter. ''You really do have to be extremely organized,'' she says, ''and sometimes I'm not.''

Laurie recommends weaving a safety net—a group of family, friends, coworkers, and professional associates who have your best interests at heart. ''Not only do I look to my family for support, but I also get a great deal of help from the people I work with. My office staff leave notes reminding me when I have to pick up the kids or get to a school function. They've been really great.''

RESOURCES

Mothers' Home Business Network, Georganne Fiumara, Director, Dept. H, P.O. Box 423, East Meadow, NY 11554. For an information package and a sample issue of the organization's newsletter, *Homeworking Mothers*, send $2 and a self-addressed number 10 envelope with 65 cents postage.

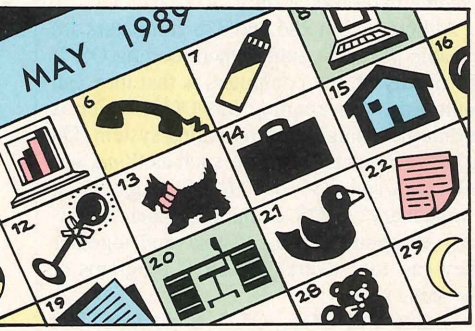
Home Business Advisor. Jan Fletcher, Editor, *Home Business Advisor*, Next Step Publications, 6340 34th Ave. SW, Seattle, WA 98126, (206) 938-2290. Annual subscription fee, $24 for six issues.

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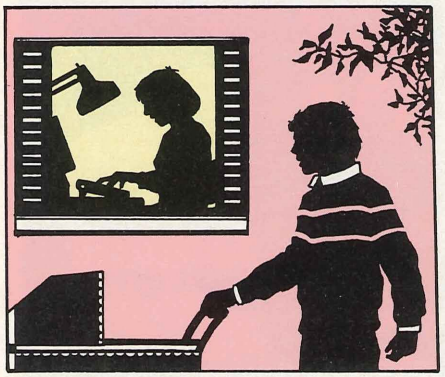
business calls while feeding your infant. Later, the phone can go sandbox-side with you and your toddler. If a new software package will help you work more efficiently, buy it and learn it now. Also consider buying a facsimile machine, which will save trips to the post office.

THE FIRST SIX MONTHS . . .

5. Baby-proof your office. Unless your baby will never be in your work area, make sure your office poses no safety threats. Take a crawling tour and search for hazards, just as you would in the rest of your home. Be especially aware of staples, correction fluid, rubber bands, and other seemingly harmless supplies. Once your baby is mobile, you may want to secure your computer behind closed, even locked, doors. The same precaution should be taken with any other ''hands-off'' materials you have. Make sure bookcases are anchored securely and will not topple over at a baby's tug.



6. Be flexible. Organize your day, but be prepared to alter your schedule. Some days will run according to plan, but others may be spent caring for a sick baby. Also, don't underestimate the effect that several weeks of interrupted sleep may have on your ability to work. Unless you're lucky enough to have a baby who sleeps through the night and naps on schedule, set a cautious pace.



7. Enlist the support of your spouse. There will be times when work will infringe on your family time. A supportive spouse can be your biggest asset; while freeing you to work in the evenings or on weekends, he or she can spend more time with the baby.

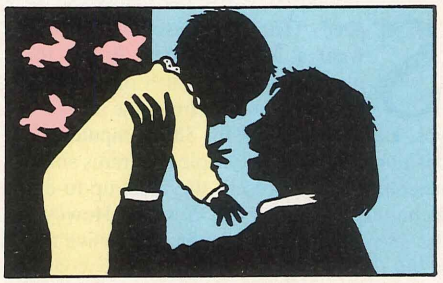
8. Hire help. In addition to your babysitters, you may want to hire someone to help with the cleaning, laundry, cooking, or yard work. By hiring a cleaning woman for just six hours a month and having my car professionally washed and vacuumed every four to six weeks, I've eliminated two stress producers at a relatively low cost. The areas where you can most use extra help will become obvious following the arrival of your baby.

FROM SIX MONTHS TO ONE YEAR . . .

9. Continually readjust. Be prepared to make major adjustments on a regular basis as your baby sleeps less and becomes more mobile. Accept that as his or her needs and skills change, the entire structure of your life, including your work schedule, may change as well. Don't forget to continue patrolling your office for safety hazards that may not have been apparent before your child was creeping, crawling, or taking his or her first steps.

10. Create a diversion. Design a special play area in, or within sight and earshot of, your office. It will be a lifesaver during those times when you have to work with your child underfoot. A playpen is a safe place for your child to play while you make important telephone calls. If you want your child to develop a positive attitude about your work, make your office a pleasant place for both of you.

11. Get out of the office. Unless your work provides a social outlet (business meetings, for example), spend some time in a social setting. Join a professional organization, a computer-user group, or schedule lunches with established or potential clients and associates. Avoid confining yourself to solitary work and parenting responsibilities—it won't do you, your baby, or your business any good.



12. Maintain a sense of humor. Laughter truly is the best medicine. Don't put blinders on to the joy and humor your baby can bring to your work environment. For the most part, clients and coworkers will be supportive of your situation as long as you handle unexpected diversions calmly and in an upbeat manner. Enjoy the moment, for it will pass all too quickly.

I'm unabashedly proud of my children and my career. Since one of my 3-year-old daughter's favorite games is ''office,'' it seems to me that business and babies can happily coexist under the same roof. ■

BUYER'S GUIDE

The Latest 386-Based Computers

They're Lightning Fast, and They Multitask—But They're Expensive. You May Want One—But Do You Need One? A Look at the Pros and Cons, Plus Reviews of Five New 386 Computers

BY EDWIN RUTSCH



Speed. That's the reason most people want a 386 computer. But is that reason enough to rush out and buy one? For some people, the answer is yes. Besides their speed, 386 computers are designed to operate multiple programs simultaneously and represent the most up-to-date technology in the MS-DOS world. However, the 386 is considerably more expensive than a 286 (AT) computer, which is now considered the standard business computer for both corporations and individuals. Let's take a closer look at the issues to consider.

ADVANTAGES OF THE 386

The 386 computer, based on the Intel 80386 microprocessor, is the latest in the line of computers that started with the original IBM PC. If you purchase a 386 now, you won't have to worry about upgrading in the near future, because you're investing in the latest MS-DOS and OS/2 hardware.

While only a few programs, such as Microsoft's *Windows/386*, Quarterdeck's *Desqview 386*, and certain versions of UNIX, require a 386-based computer, 386s run the thousands of programs written for MS-DOS computers. Certain kinds of software run on any MS-DOS computer, but run at maximum efficiency only on a 386. Graphic- and calculation-intensive programs, such as desktop-publishing, CAD software, and OS/2 with *Presentation Manager*, benefit greatly from the speed of a 386.

Consider the following example: You are working with a desktop-publishing program on an AT, and it takes 10 seconds to redraw the screen each time you move from page to page. If it only takes 5 seconds on the 386 and if the screen is redrawn 60 times per hour, that means a savings of 5 minutes per hour, or up to 40 minutes per day. This could save you hundreds or thousands of dollars per year. Besides the obvious financial savings, you wouldn't get as frustrated waiting for the computer to finish a task. So the speed of the 386 could lead to increased productivity and creativity.

While the 386's speed is most apparent with graphics programs, which are slow by nature, it also benefits users who sort through large database files or recalculate complex spreadsheets.

MULTITASKING

The 386 microprocessor was designed for multitasking—operating two or more programs at the same time. For example, you can search a database, calculate a spreadsheet, and write a letter on the word processor all at the same time.

Because of its speed, the 386 appears to be operating these programs at once, when in fact, the microprocessor alternates from one job to the next. *True* multitasking, also called multiprocessing or concurrent processing, is found mostly on mainframe computers. They have parallel processors that can actually execute two tasks at once.

Although both 286 and 386 computers are capable of multitasking when running OS/2, the beauty of 386 computers is that they can multitask when running MS-DOS, which is ordinarily a single-task operating system. On a 386 computer, programs such as *Windows/386*, *Desqview 386*, or *VM/386* set up several "imaginary" DOS computers; each imaginary computer can use 640K, and together they can run several MS-DOS programs at the same time.

Unlike MS-DOS, OS/2 is designed for multitasking. The user can simultaneously operate several programs of virtually any size, up to the limits of available memory. You can run MS-DOS applications under OS/2, but you cannot multitask. Software must be written specifically for OS/2, and presently only a few packages are available. OS/2 itself requires 2MB of memory, so to multitask you need at least 4MB.

EDWIN RUTSCH *is the author of three books:* IBM XT Clone Buyer's Guide and Handbook, IBM AT Clone Buyer's Guide and Handbook, *and* 386 Computer Buyer's Guide and Handbook, *all from Modular Information Systems, San Francisco, California.*

ILLUSTRATION BY WILLIAM T. GIBBONS

DISADVANTAGES OF THE 386

Price is the 386's biggest drawback. You usually pay 50 percent more for a 386 than a comparably equipped 286. If you need speed or multitasking, that premium is worth paying, but if you don't need it, you're just paying for leading-edge technology that will be wasted. Unless you need the capabilities of a 386, a fast (20MHz) AT clone may be a better buy.

Another disadvantage is the lack of a clear 386 hardware standard. Many companies have released 386-based computers, but not all have followed the same design for adding expansion cards. While most 386 computers have the Industry Standard Architecture (ISA) slots for 8-bit expansion cards (used on the PC and XT) and 16-bit cards (used on the AT), there is no standard for 32-bit expansion cards. Each manufacturer—including IBM, Compaq, and AST—has a proprietary design and usually supplies its own memory-expansion card.

Fortunately, this is changing. All the major 386 manufacturers except IBM have agreed to support a new 32-bit standard called the Enhanced Industry Standard Architecture (EISA). Standard PC and AT expansion cards are compatible with EISA. The first computers with this standard will probably be available later this year. IBM has its own design called MicroChannel Architecture (MCA), and a few other manufacturers have committed themselves to making MCA-compatible systems. (The Tandy 5000MC is the only notable MCA-compatible currently on the market, and it cannot be used in residential areas because it is not FCC Class B certified.) So it looks as though there will be two hardware standards for the 386-based computer: EISA and MCA.

Though several software manufacturers offer operating systems, or environments, that take advantage of the 386's capabilities, there is still no accepted standard operating system that takes full advantage of the 386's potential. The current OS/2 is designed primarily for 286 computers. An OS/2 for 386s is expected to be available late next year. Just as the lack of a hardware standard stifles the development of expansion cards, the lack of a standard operating system slows development of applications software. It may be several years before a wide variety of 386-specific software is available. Until that time, these computers will remain underutilized, thus offering few advantages to the prospective buyer.

TIME HEALS ALL WOUNDS

In time, all these disadvantages will be resolved. The prices will eventually come down, a clear hardware standard will be established, and powerful 386-specific software will be readily available. If the 386 is not for you now, it will certainly be the computer for you some time in the future.

THE 386SX CHIP: HALFWAY BETWEEN THE 286 AND 386

You may see advertisements claiming that a given 286 computer is faster than a 386 computer. That may be true, but if you read carefully you'll probably find that the manufacturer is comparing a supercharged 286 computer (20MHz with zero wait states) to a basic 386SX (16MHz with one wait state).

What is an 80386SX chip? It's a version of the Intel 80386 microprocessor with a 16-bit data path instead of the wider 32-bit path in the standard 386 chip; hence it runs slower. A 386SX runs all 386-specific software and performs multitasking better than a 286 chip. However, it may not run any faster than a 20MHz 286 chip. Since there's so little 386 software on the market, and the main reason to buy a 386 is for its speed, the 386SX chip may not be a sensible alternative.

Several 386SX models are now available. The Compaq Deskpro 386 is one of the most notable. While this computer is less expensive than some of the true 386-based computers, it is still considerably more expensive than a 286 machine. When 386SX computers come down in price later this year, they may cut into the sales of superfast 286 computers.

REVIEWS

Following are five reviews, a cross section of 386-based computers released in the past six months. For more information on these computers, as well as specifications for 33 others, see the accompanying shopping charts.

Ratings Key: ◯ Poor; ★ Average; ★★ Good; ★★★ Very good; ★★★★ Excellent.



You can't go wrong buying a Compaq computer.

Compaq 386/20e Model 40

★ EDITORS' PICK ★

SUGGESTED RETAIL PRICE: $7,418

RATING: ★ ★ ★ ★

Compaq introduced the first 386 computers in 1986 and has maintained leadership in the field ever since. The Compaq 386/20e, though not Compaq's latest model, does represent the latest generation of 386 computers. It has a small footprint, and everything is built into the motherboard.

Even though the system has a small footprint, there's room for two floppy-disk drives, one tape drive, and two hard-disk drives. Four AT-type expansion slots and one 32-bit memory slot are available, along with an excellent keyboard. Extensive and easy-to-use utility software is included with the computer, aiding set-up and start-up. The documentation is clearly written, complete with illustrations.

The 16-bit built-in VGA adapter is about twice as fast as the 8-bit VGA most computers use—a good match for the speed of the computer. There are four open expansion slots—fewer than some other 386 computers, but since all the standard interfaces are built-in, it's more than enough for most users. One minor annoyance is that the fan is louder than in other Compaq computers.

After using the Compaq 386/20e for four months, my recommendation is to buy one if you can afford one. This computer is rock solid. —STEVEN C.M. CHEN

Everex Step 386/25

★ EDITORS' PICK ★

SUGGESTED RETAIL PRICE: $6,977

RATING: ★ ★ ★ ★



This is one of the fastest 25MHz 386-based computers around.

The Everex Step 386/25 is well made and well designed. Using it is like sitting behind the wheel of a new sports car. An amber alphanumeric LED panel above the control panel provides status reports on equipment checks and disk access. There is a three-way switch with indicator lights, providing a quick, easy way to go from 8 to 12 to 25 MHz. There are also two switches—a yellow one on the left that turns off the speaker (a feature long overdue) and a red one on the right that reboots the system.

The Everex computer comes with eight expansion slots: one 32-bit slot, six AT-type 16-bit slots, and one 8-bit slot. It also has five open drive bays in the front panel instead of the usual three. This allows easy access to as many as three add-ons, like a tape-backup unit, CD-ROM drive, or additional floppy-disk drives.

The computer comes with extensive set-up software, including a hard-disk utility and RAM-disk software. Unfortunately, the Everex set-up software is not particularly intuitive or easy to use. A first-time computer user will almost certainly find it confusing.

Overall, the Step 386/25 is a high-performance computer, and one of the fastest 386s available. —EDWIN RUTSCH

IBM PS/2 Model 70-121

SUGGESTED RETAIL PRICE: $8,565

RATING: ★ ★ ★



The Model 70-121 comes with everything built in, including a 120MB hard-disk drive.

The IBM PS/2 Model 70 represents a break from IBM's previous XT and AT hardware standard. Improvements include a new bus called the MicroChannel, a new video standard called VGA that offers more colors and higher resolution, and a 3.5-inch floppy-disk drive. There's also a self-configuring setup that automatically determines the various expansion cards connected to the computer.

There are several different versions of the PS/2 70: the 70-E61 (16 MHz), the 70-121 (20 MHz) reviewed here, and the 70-A21 (25 MHz).

Many features considered extras on IBM's previous computers are now built in on the motherboard. The PS/2 Model 70 comes with a VGA, serial port, parallel port, and mouse port.

The design is small and compact. The computer has only three expansion slots, but this should be sufficient for most users, since the unit has so much built-in. The PS/2 Model 70-121 comes with a large (120MB), expensive IBM hard-disk drive, which you may not want.

Another disadvantage is the lack of a 5.25-inch drive bay, making the transition from 5.25-inch drives to 3.5-inch drives difficult. This could make it extremely inconvenient to transfer data from your old computer to the new one. Such transfers usually require the purchase of an external 5.25-inch floppy-disk drive.

In general, the PS/2 Model 70 is a quality, high-performance computer whose main disadvantage is that it only comes with a 120MB hard-disk drive. —EDWIN RUTSCH

Mitac Paragon 386E

SUGGESTED RETAIL PRICE: $5,113

RATING: ★ ★ ★



Mitac packs an impressive array of features into this inexpensive and compact computer.

Mitac built its reputation with Apple II-compatible floppy-disk drives but has now expanded into manufacturing complete IBM PC-compatible systems. The Paragon 386E offers an impressive combination of high speed, flexibility, and compactness. Discount prices should make this an attractive choice for 386 computing.

The computer operates at 20MHz. Performance could be improved with a caching system, but even unadorned, the speed is not disappointing. The hard-disk access time is the standard 28 ms, and the drive is silent during operation. Also, the power-supply fan is one of the quietest around.

The keyboard connector is mounted on the front panel—the best location for avoiding cable strain—along with the power switch, reset button, and key lock. The 5.25-inch floppy drive is mounted horizontally, and the 3.5-inch vertically. Although there's no 32-bit memory-expansion slot, you can add up to 8MB directly to the system board.

The manuals are clearly written and adequately illustrated. The computer carries a one-year limited warranty, but since Mitac does not deal directly with the user, you'll have to put yourself at the mercy of your dealer for technical help and service.

—HENRY F. BEECHHOLD

Tandon 386 Model 110P

SUGGESTED RETAIL PRICE: $9,647 †

RATING: ★ ★ ★

† The Tandon 386 Model 40, with a 40MB hard-disk drive, has a suggested retail price of $7,197.

The Tandon 386 Model 110P comes with a 110MB hard-disk drive.



The Tandon Computer Corporation supplied all the floppy-disk drives for IBM PCs from 1981 to 1985. Tandon is now a worldwide company and has been producing full-fledged computer systems for the past few years.

The Model 110P comes with a 110MB hard-disk drive as well as an InPac. An InPac is a receptacle for the optional Data Pac ($399)—a removable hard disk that can be used to back-up the standard hard-disk files at the end of the workday or to move a large number of files from one computer to another.

The Data Pac access speed is 40 ms, slower than the 29 ms speed of the internal hard-disk drive. Tandon also offers the Model 40, which has a 40MB hard-disk drive but no InPac, for about $2,500 less than the 110P.

It's simple to set up the system, especially with the supplied software. In addition, the 386/20 comes with its own well-organized, easy-to-use on-line tutorial. It's easy to get the computer up and running.

The Model 110P comes with 1MB of RAM, and you can expand up to 8MB on the motherboard. It includes five open drive bays for floppy or tape devices, plus the InPac. The keyboard is well made and feels comfortable—neither too soft nor too hard.

The Tandon 386 Model 110P is a superior computer in many respects, but it *is* expensive.

—EDWIN RUTSCH

GUIDE TO 386-BASED COMPUTERS

This chart is divided into four sections: 16MHz 80386SX-based computers; 16MHz, 20MHz, and 25MHz 80386-based computers. All models listed are FCC Class B certified.

For this chart, we've put together a "standard" system that would be able to satisfy the demands of most business users. It consists of at least 1MB of memory (RAM), a keyboard, a 1.2MB 5.25-inch (or a 1.44MB 3.25-inch where noted) floppy-disk drive, a 40MB hard-disk drive (80MB or higher for 25MHz) with an access speed of 28 milliseconds (ms) or lower, VGA output (either built-in or on a card, 16-bit or 8-bit), a parallel port (P), a serial port (S), and DOS. The system's suggested list price also includes a VGA monochrome or color monitor.

When the manufacturer's standard configuration does not include these basic system requirements, we add the cost of the missing components to the system list price. For example, if DOS isn't included, the list price in the chart includes the cost of DOS. Our chart also lists extra components, such as two serial ports (2 S) instead of one, or a mouse port (M).

All the models in the chart have at least three free expansion slots, enough for your basic expansion needs. Six types of expansion slots are listed in the chart: PC (8-bit); AT (8- or 16-bit); MCA-16 or MCA-32 (MicroChannel Architecture in 16-bit or 32-bit); P-16 (proprietary 16-bit memory slot); P-32 (proprietary 32-bit memory slot).

The number of wait states is determined largely by the speed of the memory (RAM). The fewer the wait states (zero is best), the faster the memory chip and the faster the machine operates. To truly reach zero wait state, many manufacturers use a scheme called memory caching instead of expensive, fast RAM. Memory caching is using a small bank of high-speed memory (usually 32K) to store frequently used data.

As for the hard-disk drive access speed (measured in millisecond), the lower the number, the better; 28 ms is the standard today. As display cards go, a 16-bit VGA card is faster than an 8-bit VGA card.

Company/Model	System Suggested Retail Price[1] VGA Mono/ VGA Color	Standard/ Maximum System Memory	Floppy-Disk Drives	Hard-Disk Drive Capacity/ Access Speed	Ports	Available Expansion Slots	Wait States (Cycles)	Memory Caching	Warranty (Months)
16MHZ 386SX-BASED									
AST Premium Workstation/386SX Model 45	na / $5,190	1MB/6MB	1	40MB/28 ms	P, 2 S, VGA (16)	2 AT	0	na	12
Compaq Deskpro 386s Model 40	$4,574 / $5,018	1MB/1MB	1	40MB/28 ms	P, S, M, VGA (16)	1 P-16, 4 AT	1	na	12
Everex Step 386is	na / $4,477	1MB/4MB	1	40MB/28 ms	P, S, VGA (16)	4 AT, 2 PC	0	64K	12
16MHZ 386-BASED									
Amdek System/386E-40	$4,989 / $5,369	1MB/2MB	1	40MB/28 ms	P, 2 S, VGA (8)	4 AT, 1 PC	0	na	12
American Mitac Paragon 386	$3,954 / $4,293	1MB/8MB	2[2]	40MB/28 ms	P, 2 S, VGA (16)	3 AT	0	na	12
AST Premium 386/16 Model 45	na / $5,689	1MB/8MB	1	40MB/28 ms	P, S, VGA (16)	1 P-32, 3 AT, 1 PC	0	64K	12
CompuAdd 386/16[3]	na / $3,137	1MB/4MB	1	40MB/28 ms	P, S, VGA (16)	3 AT, 1 PC	0	na	12
Cordata CS5040	na / $5,734	2MB/16MB	1	40MB/28 ms	P, 2 S, VGA (16)	4 AT, 1 PC	0	na	12
Everex Step 386/16	na / $5,477	1MB/8MB	1	40MB/28 ms	P, S, VGA (16)	1 P-32, 4 AT, 1 PC	0	64K	12
IBM PS/2 Model 70-E61	$6,365 / $6,865	1MB/6MB	1[4]	60MB/27 ms	P, S, M, VGA (16)	1 MCA-16, 2 MCA-32	0	na	12
IBM PS/2 Model 80-041	$7,365 / $7,685	1MB/16MB	1[4]	44MB/30 ms	P, S, M, VGA (16)	4 MCA-16, 3 MCA-32	1	na	12
Packard Bell PB386/16[5]	$7,571 / $7,901	1MB/16MB	1	40MB/28 ms	P, 2 S, VGA (8)	6 AT, 1 PC	0	na	12
Tandon 386/16 Model 40[6]	$5,747 / $6,147	1MB/8MB	1	40MB/30 ms	P, S, VGA (16)	4 AT, 1 PC	0	64K	12
Tandy 4000	na / $4,998	1MB/8MB	1[4]	40MB/28 ms	P, S, VGA (16)	1 P-32, 4 AT, 1 PC	1	na	12
Zenith Z-386 Model 40[6]	$5,798 / $6,198	1MB/16MB	1	40MB/28 ms	P, S, VGA (16)	3 P-32, 2 AT	0	64K/$595	12
20MHZ 386-BASED									
American Mitac Paragon 386E	$4,774 / $5,113	1MB/8MB	2[2]	40MB/28 ms	P, 2 S, VGA (16)	3 AT	0	na	12
AST Premium/386C Model 340	na / $6,789	1MB/16MB	1	40MB/28 ms	P, 2 S, VGA (16)	3 AT, 1 PC	0	64K	12
Compaq Deskpro 386/20e Model 40	$6,974 / $7,418	1MB/1MB	1	40MB/28 ms	P, S, M, VGA (16)	1 P-32, 4 AT	0	32K	12
CompuAdd 386/20[3]	na / $3,488	1MB/16MB	1	40MB/28 ms	P, 2 S, VGA (16)	4 AT, 1 PC	0	32K	12
Cordata CS5040-2	na / $6,534	2MB/16MB	1	40MB/28 ms	P, 2 S, VGA (16)	4 AT, 1 PC	0	na	12
Dell System 310[3]	$3,999 / $4,299	1MB/16MB	1	40MB/28 ms	P, 2 S, VGA (16)	1 P-32, 4 AT, 1 PC	0	32K	12
Everex Step 386/20	na / $5,877	1MB/8MB	1	40MB/28 ms	P, S, VGA (16)	1 P-32, 4 AT, 1 PC	0	64K	12
IBM PS/2 Model 70-121	$8,365 / $8,865	2MB/6MB	1[4]	120MB/23 ms	P, S, M, VGA (16)	1 MCA-16, 2 MCA-32	0	na	12
IBM PS/2 Model 80-111	$9,365 / $9,865	2MB/16MB	1[4]	115MB/28 ms	P, S, M, VGA (16)	4 MCA-16, 3 MCA-32	0	na	12
Maxar 386/20	na / $5,424	1MB/4MB	1	85MB/25 ms	P, 2 S, VGA (16)	2 P-32, 5 AT, 1 PC	0	na	12
Micro Express 386-20[3]	na / $3,475	1MB/8MB	1	40MB/28 ms	P, S, VGA (8)	1 P-32, 5 AT, 1 PC	0	64K	15
Mitsubishi MP 386 Model 142V	na / $7,395	1MB/2MB	1	40MB/28 ms	P, 2 S, VGA (16)	2 P-32, 4 AT, 2 PC	0	32K	12
NEC PowerMate 386/20	na / $7,240	2MB/16MB	1	40MB/28 ms	P, 2 S, VGA (16)	3 AT, 2 PC	0	na	12
Packard Bell PB386/20	$9,456 / $9,786	1MB/16MB	1	40MB/28 ms	P, S, VGA (8)	6 AT, 1 PC	0	na	12
Tandon 386/20 Model 40[6]	$6,747 / $7,197	1MB/8MB	1	40MB/30 ms	P, S, VGA (16)	4 AT, 1 PC	0	64K	12
25MHZ 386-BASED									
American Mitac MPC4000F	$7,759 / $8,098	2MB/8MB	2[2]	100MB/24 ms	P, 2 S, VGA (16)	1 P-32, 7 AT	0	na	12
AST Premium 386/25 Model 95	na / $9,589	2MB/4MB	1	90MB/18 ms	P, 2 S, VGA (16)	2 P-32, 1 AT, 1 PC	0	32K	12
Compaq Deskpro 386/25 Model 110	$11,273 / $11,717	1MB/13MB	1	110MB/24 ms	P, S, VGA (16)	3 AT, 2 PC	0	32K	12
CompuAdd 386/25[3]	na / $4,334	1MB/16MB	1	80MB/28 ms	P, 2 S, VGA (16)	4 AT, 1 PC	0	32K	12
Everex Step 386/25	na / $6,977	1MB/8MB	1	80MB/28 ms	P, S, VGA (16)	1 P-32, 4 AT, 1 PC	0	64K	12
IBM PS/2 Model 70-A21	$11,665 / $12,165	2MB/8MB	1[4]	120MB/23 ms	P, S, M, VGA (16)	1 MCA-16, 2 MCA-32	0	64K	12
Micro Express 386-25[3]	na / $5,524	4MB/8MB	1	80MB/23 ms	P, S, VGA (8)	1 P-32, 5 AT, 1 PC	0	64K	15
Zenith Z-386/25 Model 70[6]	$9,298 / $9,698	2MB/8MB	1[4]	70MB/18 ms	P, 2 S, VGA (16)	3 P-32, 1 AT	0	16K	12

KEY: na = not available; [1]Suggested retail price, 20-percent discount is usually available from your local store; [2]Includes both 1.2MB 5.25-inch and 1.44MB 3.5-inch floppy-disk drives; [3]Mail order (direct sale) only, no additional discount available; [4]1.44MB 3.5-inch floppy-disk drive; [5]Includes ConcurrentDOS 386; [6]Includes Microsoft's Windows/386.

MANUFACTURERS

Amdek (408) 922-5700; American Mitac (408) 432-1160; AST (714) 863-1333; Compaq (713) 370-0670; CompuAdd (512) 250-1489; Cordata (213) 603-2901; Dell (512) 338-4400; Everex (415) 498-1111; IBM (800) 426-2468; Maxar (408) 733-0810; Micro Express (714) 662-1973; Mitsubishi (213) 515-3993; NEC (312) 860-9500; Packard Bell (818) 773-4400; Tandon (805) 523-0340; Tandy (817) 335-7198; Zenith (312) 699-4800;

CHART COMPILED BY STEVEN C.M. CHEN

A Guide to Painless Telecommunications

It's the Software that Matters Most in Getting You Through the Tricks and Traps of Going On-line

BY STEVE MORGENSTERN

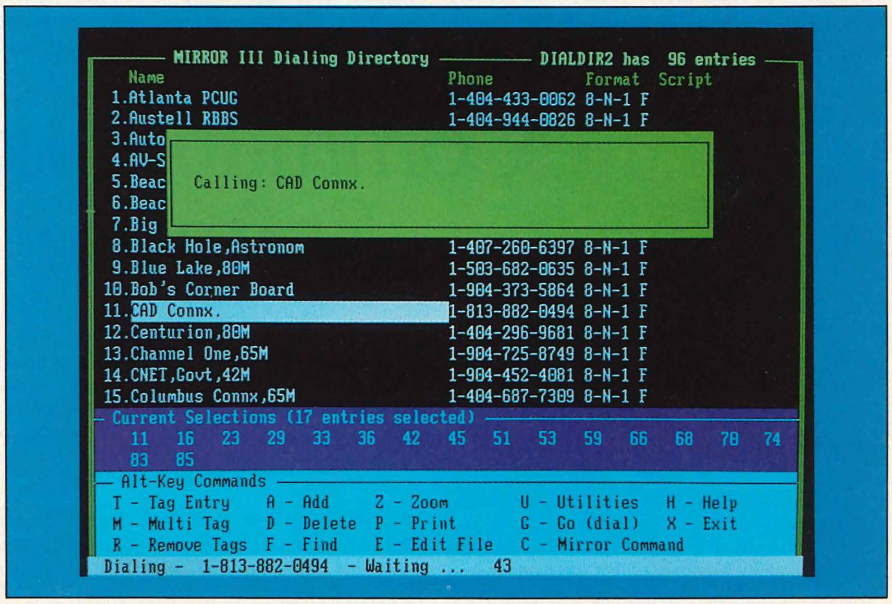
My editor needs this article yesterday—an entirely business-as-usual situation. I have several choices for getting it from my suburban home office to the magazine's New York City headquarters.

I can print out the file, save a copy to disk, tuck both in an envelope, and call a messenger service. Elapsed time from call to delivery—about six hours. Out-of-pocket expense—about $20.

First-class mail is cheaper, but too slow.

Overnight delivery services will get it there tomorrow—too late perhaps—and cost from $9 to $12. And getting on a train to hand-deliver the article is an appealing prospect socially, but a poor use of my time.

Happily, solutions to this puzzle are at hand—my modem and communications software. When I'm through fiddling with the text, I'll save it to disk, log onto CompuServe or MCI Mail, and send the file to my editor's electronic mailbox. The total cost, including telephone call and either CompuServe's per-minute charge or MCI Mail's per-message fee, will be under $2; and he'll be able to attack the text minutes after I finish sending it. Compared with the delivery alternatives, there's simply no contest.



The dialing directory in Mirror III *helps you go on-line automatically. If you often try to log onto private bulletin-board systems, whose phone lines are typically busy, you'll appreciate that the program both redials busy numbers and lets you set up a series of numbers to be dialed in sequence until you get through. Although you control* Mirror III *via commands—rather than menus—reminders for the mnemonically based commands are displayed on-screen.*

SOFTWARE COLORS YOUR TIME ON-LINE

Given the same baud rate, the same command set—Hayes compatible, for instance—and the same display lights up front (assuming you have an external modem), all high-quality modems will operate pretty much the same. In that sense, all good modems are transparent: It's the software controlling your modem, as well as the software controlling the computer you're communicating with (often called the *remote computer*), that most colors your on-line experiences. Of course, you can't normally choose the remote computer's software; but, in order to make your time on-line as easy as possible, you *can* select the best communications software for your needs. (*Picking the right modem is still important, however—for instance, some manufacturers say that their modems are less susceptible to phone-line noise than others—so see our "Miniguide to Modems" on page 64.*)

I'd recommend that you choose communications software based on features that add convenience. For example, the on-line communications process involves several repetitive procedures. The more of these your program takes over, the simpler your operations become. Several other features, though not absolutely necessary for transferring data back and forth, can also save time and energy. Here are capsule descriptions of available options.

Dialing Directory. Why dial a particular number every time you want to call it? Many communications programs allow you to set up a disk-based phone book that lets you enter the number once, then dial it automatically in the future.

Automatic Redial. Commercial on-line services have enough capacity to let you get through on the first call nearly every time, but you'll find that private bulletin-board systems are often busy. Several programs will instruct the modem to redial a busy number after an interval you specify, if your modem is equipped to recognize the busy signal (many are). Some programs are limited to calling the same number time and again—others let you set up a series of numbers to be dialed in sequence until you get through.

Scripting. A script is a set of steps your computer should follow during an on-line session. The most common scripting procedure will connect you automatically to an on-line bulletin board or service. You generally go through the same sequence every time you

STEVE MORGENSTERN, *a contributing editor for* HOME-OFFICE COMPUTING, *submits all his articles by modem. You can reach him via e-mail on CompuServe (*72545,606*) or MCI Mail (*SMORGENSTERN*).*

make this connection—typing in your name or account number and then, when prompted, your password. By setting up a scripted log-on procedure, you can sit back and watch as the software makes the connection.

More elaborate scripting is also available through the use of a software package's own programming language. Such languages give you a series of commands—such as "send text" or "dial modem"—which will be executed in order. Some programs provide conditional statements (If-Then-Else) that let you tell your computer what to do if various conditions arise. For example, you can create a script that will automatically retrieve your mail from an on-line service. If there's mail waiting for you, the program will capture it in a file to be read later; or else, if the service sends its "no mail" message, the script will instruct your computer to sign off the service and hang up.

If you're the type who enjoys tinkering with computer programs, you might like an extensive scripting language. But for most people, a simple automated log-on capability will be sufficient, and many programs come with canned scripts for this purpose. By filling in the specific phone number, account name or number, and password that you'll be using, you'll have a ready-to-run procedure.

A few programs offer another level of automation, often called a *learn* mode. They will record your keystrokes as you communicate with the remote computer and create a script to replay this interaction in the future. These automatically generated scripts may require some fine tuning to be really useful, but it's a quick way to build the basic script.

On-Screen Timer. Time is money in on-line communications, both on your monthly phone bill and in incremental charges from commercial on-line services (although some services, such as Prodigy and MCI Mail, charge flat fees). An on-screen timer displays the time elapsed since you placed the call.

Activity Log. An unusual but valuable capability. In most cases, you'll be paying the phone company for the time you spend connected to another computer. You may also be paying per-minute charges to a commercial on-line service and to a telephone-access service that provides a local phone number for connecting to the commercial service but charges a per-minute premium for that convenience. A few programs automatically keep track of your activity, creating a text file with a complete listing of whom you

Communications Software

By referring to the main article, you'll find complete explanations of all the terms covered in the chart and capsule comments that follow.

MS-DOS

★ EDITORS' PICK ★ **Boyan.** Justin Boyan wrote this shareware package to finance his college education, and he did an exceptional job. A few highlights: extensive scripting function; multiple 200-entry phonebooks; excellent file-management features, including instant estimate of file-transfer time at current baud rate for any file on disk; and complete log of on-line activity that includes listing of files transferred. The only significant flaw is the manual which, though detailed, lacks professional polish. You can download the program from a bulletin board and pay if you decide to use it, or send $55 for the program on disk to Justin Boyan, Boyan Communications, 9458 Two Hills Court, Columbia, MD 21045.

Crosstalk XVI. Operating this program by typing in two-letter commands is efficient once you know what you're doing, but more extensive on-line help would be appreciated. The scripting language is very good—in fact, other programs have cloned it (*see below*)—and the manual explains both scripting and general program operations unusually well.

Freeway Advanced. If you like menus, you'll like *Freeway Advanced*. By highlighting a menu choice and pressing Return, you can access almost any command you'll ever need. This is a good choice for novices. It would be even better if the often inadequate and occasionally inaccurate manual were improved. Scripting is extensive but poorly documented, command structure poorly implemented. Offers background operation, but troublesome to work.

★ EDITORS' PICK ★ **Mirror III.** A strong program and a certifiable bargain. *Mirror* began as a clone of *Crosstalk*, but has been expanded in significant ways. The on-line help is strong, the scripting language—complete with a learn mode—works well and is well documented, and the background operation is smooth in most cases. The absence of menus makes it a little more difficult to use than some. Includes a *WordStar*-like text editor.

★ EDITORS' PICK ★ **ProComm Plus.** An enhanced commercial version of a longtime favorite shareware program, *ProComm Plus* is a solid choice for novices and advanced users; and the price is certainly attractive. The dialing directory is large (up to 200 entries), the user interface is easily learned, and on-line help is good. One of my favorite features: the excellent activity log. Extensive scripting, but mediocre documentation.

Relay Gold. Basically a corporate-oriented product, with its strength in mainframe communications; but the unique and comprehensive disk-based tutorial is appealing for anyone. Background operation runs smoothly, and the documentation is excellent. Extensive scripting, too, with notable documentation.

Smartcom III. *Smartcom III*'s menu structure is clear and comprehensive. Scripts can be either learned as you perform commands or written using an editor that presents all the available commands and lets you insert them from the list. Completed scripts are compiled to speed execution noticeably. On-line help is excellent and so is the included text editor, which is truly a small word processor. Background mode is available, but only marginally useful given the program's high memory requirements. Works best with Hayes-brand modems.

MACINTOSH

MacTerminal. What it does, it does well—but it doesn't do much. Adequate for occasional on-line work, but the price should be lower for the few features it provides.

★ EDITORS' PICK ★ **MicroPhone II.** Provides full support for an unusual variety of modems. The scripting language is a strong point—powerful, reasonably well documented, with a useful learn mode to get you started and choose-from-a-menu command selection for writing scripts. User interface is nicely designed and particularly easy to learn. An attractive choice.

MockTerminal (part of *MockPackage Plus Utilities*). One module in a powerful set of desk accessories (including word processing, charting, and useful utilities), *MockTerminal* offers good basic telecommunications capabilities and DA convenience (it's available while you're using nearly any other program). Note that it works only with Apple- or Hayes-compatible modems.

Red Ryder. The commercial version of a popular erstwhile shareware product, *Red Ryder* is a full-featured communications program with several distinctive touches. The phone book is excellent. So is the on-screen clock, which can display both time elapsed and charges accrued. A handy macro facility lets phrases or entire scripts be assigned to keystroke combinations, on-screen buttons, or both. With learn mode, scripting is complete and scripts are then compiled for speedy execution.

★ EDITORS' PICK ★ **Smartcom II.** With an elegant user interface, *Smartcom II* adheres to both the mechanics and philosophy of Mac computing. On-screen icons access all major program functions, including good script building with learn mode and text editing. Users can program additional on-screen button commands. Program is customized to take advantage of Hayes-specific modem features, but the latest version allows adaptation for other brands of modems. I do miss having an on-line timer, but I like conducting an entire on-line session without even pulling down a menu.

called, when, and for how long. I find this extraordinarily convenient when checking my bills and when billing clients.

Split-Screen "Chat" Mode. Ordinarily the text sent by the remote computer alternates on a single screen with the text you send. Sometimes it's easier to follow if you can split the screen, with the text from the remote system appearing in the top half of the screen, and your text in a separate window below. This is particularly true if you are "chatting," or having an on-line conversation with another computer user.

Menu vs. Command Driven. This is largely a matter of personal taste. Some communications software relies entirely on alphanumeric commands that you enter at the keyboard. These are generally brief and mnemonic and can be entered quickly. If you prefer menus, there are programs that run almost entirely on selections you make from on-screen menus. This can be comforting to the newcomer, but can slow you down as you become more adept. Frequently a menu-based system accommodates more experienced users by providing extensive command-key shortcuts that perform the same functions as their associated menu selections.

Text Editor. A built-in text editor for writing simple messages to be sent to the remote computer is a handy feature. Even when the remote system lets you write your message directly while connected, it's often easier to work in your own text editor and then send the completed message.

On-Line Help. As with any other software, it's always useful to have additional explanatory text available while you work with your communications program.

Background Operation. Sending or receiving files can take time, even with a speedy modem. It would be nice to free up your computer for other tasks while the file transfer goes on in the background. You can do that with some communications software, though the process isn't yet flawless.

Some MS-DOS programs have their own background processing capability. You hit a keystroke combination and you're back at the DOS prompt, ready to run your word processor or other software while the communication process continues. Some programs are compatible with multitasking environments you buy separately, such as *Windows/386* and *Desqview/386*, which allow you to run multiple programs simultaneously.

On the Macintosh side, MultiFinder al-

Title/Version Price/Publisher	System Requirements	File-Transfer Protocols	Terminal Emulations	Dialing Directory	Auto-Redial	Scripting	On-Screen Timer	Activity Log	Chat Mode	Menu/Command	Text Editor	Background Operation	On-Line Help
MS/DOS													
Boyan v4.0 $55 ($10 for manual) Boyan Communications (919) 682-4225 (BBS only)	256K IBM PC, PS/2; two drives; DOS 2.0 or higher	XModem, YModem, XModem 1K, YModem-G, Relaxed XModem, ZModem, Kermit, CompuServe B	TTY, ANSI, VT52, VT100	Y	Y	Y	Y	Y	Y	Command	N	N	Y
CrossTalk XVI v3.7 $195 Digital Communications Associates, (404) 998-3998	128K IBM PC, PS/2; one drive; DOS 2.0 or higher	XModem, Kermit, CrossTalk	TTY, ANSI, VT52, VT100, VT102, IBM 3101, plus 3 more	Y	Y	Y	Y	Y	N	Command	N	Y	Y
Freeway Advanced v3.0 $140 Kortek Inc., (415) 327-4555, (800) 327-0310	384K IBM PC, PS/2; two drives; DOS 2.1 or higher	XModem, YModem, YModem-G, Kermit, CompuServe B	TTY, ANSI, VT52, VT100, VT102	Y	Y	Y	Y	N	N	Both	Y	Y	Y
Mirror III v1.0 $100 SoftKlone Distributing Corp. (904) 878-8564	192K IBM PC, PS/2; two drives; DOS 2.0 or higher	XModem, YModem, YModem-G, Kermit, CompuServe B, CrossTalk, Smartcom, X-YModem batch	ANSI, VT52, VT100, VT220, IBM 3101, Wyse 50, plus 7 more	Y	Y	Y	Y	Y	Y	Command	Y	Y	Y
ProComm Plus v1.1b $89 Datastorm Technologies, Inc. (314) 474-8461	192K IBM PC, PS/2; one drive; DOS 2.0 or higher	XModem, YModem, YModem-G, Kermit, ASCII, CompuServe B, plus 7 more	TTY, ANSI, VT52, VT102, Wyse 50, IBM 3101/3270, plus 6 more	Y	Y	Y	Y	Y	Y	Both	Y	with *Windows* or *DESQview*	Y
Relay Gold v3.0 $295 Microcom Software Division (203) 798-3800	192K IBM PC, PS/2; two drives; DOS 2.0 or higher	XModem, Kermit, Relay	TTY, VT52, VT100, VT220, Telex, IBM 3101/3270	Y	Y	Y	Y	N	Y	Combination	Y	Y	Y
Smartcom III v1.1 $249 Hayes Microcomputer Products (404) 449-8791	512K IBM PC, PS/2; hard-disk drive; DOS 2.0 or higher	XModem, XModem 1K, YModem, YModem-G, Kermit, XModem CRC	TTY, ANSI, VT52, VT100, VT102	Y	Y	Y	N	Y	N	Menu	Y	Y	Y
MACINTOSH													
MacTerminal v2.3 $125 Apple Computer, Inc. (408) 996-1010	512K Macintosh; one drive; System 3.2 or higher	XModem, MacBinary, MacTerminal 1.1	TTY, ANSI, VT52, VT100, IBM 3278	N	N	N	N	N	N	Menu	N	Y	N
MicroPhone II v2.0 $295 Software Ventures Corp. (415) 644-3232	512Ke Macintosh; one drive; System 4.1 or higher	XModem, MacBinary, YModem, Kermit, MacTerminal 1.1, plus 3 more	TTY, ANSI, VT52, VT102	Y	Y	Y	N	N	N	Both	Y	Y	N
MockTerminal (part of *MockPackage Plus*) v4.4 $50 CE Software, (515) 224-1995	512K Macintosh; one drive; System 4.2 or higher	XModem, MacBinary	TTY	Y	Y	N	N	N	N	Menu	N	Y	N
Red Ryder v10.3 $80 Freesoft Company (412) 846-2700	512K Macintosh; one drive; System 3.2 or higher	XModem, MacBinary, XModem 1K, YModem batch, Kermit, YModem 1K, XModem CRC	TTY, VT52, VT100	Y	Y	Y	Y	N	N	Both	Y	Y	N
Smartcom II v3.1 $149 Hayes Microcomputer Products (404) 449-8791	512K Macintosh; one drive; System 4.1 or higher	XModem, MacBinary, XModem 1K, YModem batch, YModem-G, XModem CRC	TTY, VT52, VT100, VT102	Y	Y	Y	N	N	N	Menu and Icons	N	Y	Y

lows for background communications if your software is "MultiFinder-aware."

There is a price to be paid for attempting background communications, though. Since both your communications program and the other program running simultaneously must share the microprocessor, neither works as quickly as it would if it were running alone. Since the on-line communications process is time-sensitive, you may slow the file-transfer process, encounter a higher error rate than usual, or even lose the connection entirely. This will often depend on the demands made by the other program you're running.

TRANSMITTING YOUR DATA

There's no substitute for reading the manuals that come with your modem and communications software. However, don't get hung up on understanding every bit of minutiae thrown your way. Some manuals are very good about giving you the basics clearly, concisely, and right up front. Others get bogged down in the technicalities of the process, lingering over every possible configuration, until you get the feeling you'll never make this work.

Look for the meat of the matter: installing the software and setting up the basic configuration for sending and receiving data, called uploading and downloading, respectively.

Here are some quick pointers:

Data Format, Parity, and Stop Bits. I'll spare you a long explanation of these terms; you'll find one in almost any communications-software manual. Suffice it to say that these control the format of the data you send and receive. The correct values to use depend on the computer to which you are connecting—as long as you both have the same settings, you're fine. And there are only two common settings: 8 bits, no parity, and 1 stop bit, or 7 bits, even parity, and 1 stop bit. If you're not sure which one the other computer is using, try the first. If some of the characters on your screen look strange, try the second.

File-Transfer Protocols. Telephone lines were designed for voice, not computer data. If there's static on the line, the information can be garbled. That isn't usually a major problem when you simply send text back and forth, but even a single error creeping into a program file can keep that program from running. File-transfer protocols were invented to solve this problem.

There are several different protocols, but they all work the same way. A block of information is sent, then a check signal is sent back to ensure that it was received okay. If not, the block is sent again. If everything is all right, the next block is sent.

The most common file-transfer protocol is called XModem—you'll find it in nearly every piece of communications software and every remote computer system. There are XModem variants, including YModem and YModem Batch. There is also a protocol called Kermit (named after Kermit the Frog of Muppet fame) that is more frequently used on university and corporate mainframes than on public-access systems. CompuServe, one of the most widely used commercial on-line systems, has created its own additional file-transfer protocols (CompuServe B and Quick B), which are supported by some communications software. In addition, a few programs have their own file-transfer protocols, which can be used only when communicating with computers running the same software.

Make your life easy: Start out using XModem when transferring program files or any other file that has to be received perfectly. If you are using CompuServe and your program supports CompuServe B protocols, you will be able to automate the operation a little further. For most people, that's all you really need to know—although if you're transmitting straight ASCII text that doesn't need to be received perfectly, you can send the file without any protocols.

Macintosh users should be aware of one wrinkle. If you are sending a file to another Mac user, choose the MacBinary file protocol, which works with your regular protocol, such as XModem, to transfer such Mac-specific data as the file's icon. If the file will be used on other computer systems, use straight XModem.

Terminal Emulation. A terminal emulation is precisely what it sounds like: a way to make your computer behave as if it were a *dedicated terminal*—a dumb keyboard and monitor setup used to communicate with mainframes or minicomputers. Several communications programs offer lists of terminal emulations as long as your arm. It doesn't hurt, but you won't need any of the relatively obscure terminal emulations unless you're dialing into a mainframe that specifically calls for that type of terminal, which is unlikely outside a corporate setting. Don't get hung up on the number of terminal emulations provided—most people working out of their homes will use only one or two, and they're available in even simple software. For plain-vanilla communications, such as with CompuServe or GEnie, look for the basic TTY terminal emulation. Many on-line services and bulletin-board systems also support a screen-graphics system called ANSI, which is often provided as a terminal emulation.

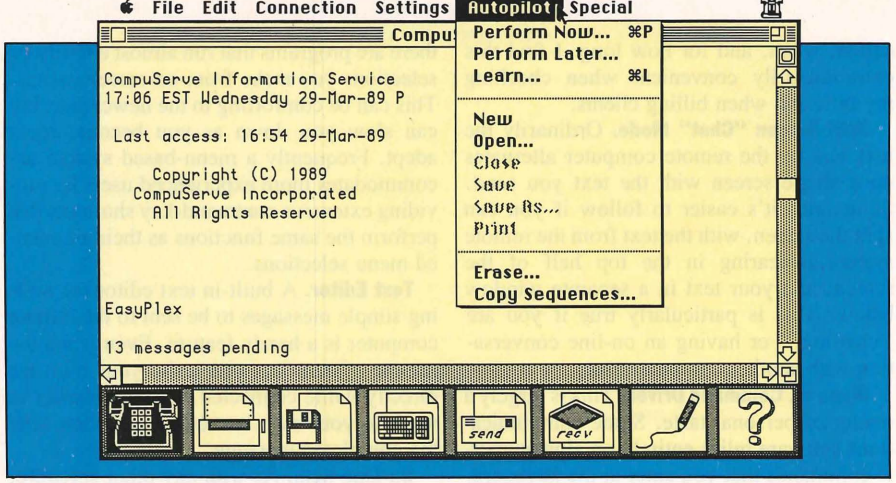
Duplex. There are two available duplex settings, also called echo—full duplex and half duplex. The proper choice is once again based on the operation of the computer to which you're connecting.

If you know which setting the remote computer requires, great. If not, it's easy to figure out. If you are set for half duplex and you see double characters on your screen (lliikkee tthhiiss), change your setting to full duplex. If you're in full duplex and don't see anything appearing on your screen when you type, switch to half duplex.

BOTTOM-LINE SAVINGS

Electronic mail (e-mail) is now a central part of my business. I use it to submit my own work and to receive articles other freelance writers submit to me for the magazine I edit. I keep in touch with contributors, potential contributors, business associates, friends, and acquaintances by checking my on-line in-box at least once a day.

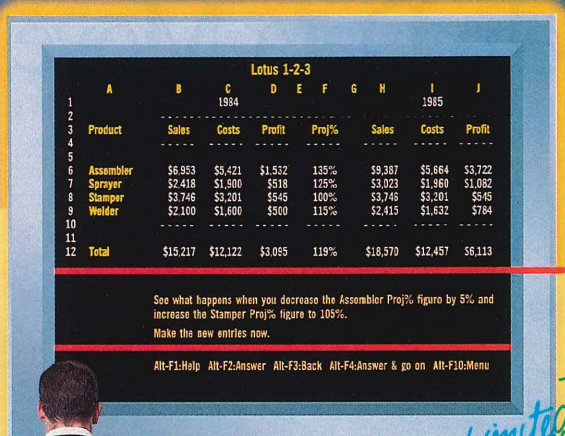
Some mornings, when I sit down at the desk in my home office, I look at the clock and think, "Hey, I just saved myself an hour and a half in commuting time." I find the same kind of satisfaction in communicating via modem. Finding reference information on-line, sending and receiving messages by electronic mail, delivering a finished article to an office 3,000 miles away minutes after it's done—these have become routines of my business, but I still savor the savings in time, money, and aggravation. And for a few hundred dollars in hardware and software and an hour or two of setup time, the same rewarding efficiency boost is available to anyone with a computer. ■



By placing icons for such common functions as sending and receiving data across the bottom or side of the screen (your choice), Smartcom II *gives you an elegant interface for telecommunications. Scripting with* Smartcom II*—called "Autopilot" in the menu above—is especially easy, since the program can record any on-line procedure the first time you perform it and then replay it automatically in subsequent sessions.*

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7	Sprayer	$2,418	$1,900	$518		125%		$3,023	$1,960	$1,082
8	Stamper	$3,746	$3,201	$545		100%		$3,746	$3,201	$545
9	Welder	$2,100	$1,600	$500		115%		$2,415	$1,632	$784
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609

2400-Baud External Modems Help Data Move Faster

BY HENRY F. BEECHHOLD

Includes Reviews of Three Popular Models

Now it's easier than ever to access vast amounts of information from your home office. All you need to reach electronic-information services such as CompuServe and electronic-mail services like MCI Mail is your computer, communications software, a telephone line, and a modem.

Commonly available modems are rated at 300, 1200, 2400, and 9600 baud. The higher the baud rate, the faster the data is transmitted. The modems reviewed here work at 2400 baud and can be connected to any computer that has a serial port.

Modems are either internal or external to a computer. An internal modem is an add-on card that plugs into an available slot inside your computer. An external modem is contained in a separate desktop enclosure and is connected to your system by a serial port (you usually have to supply the necessary serial cable).

MODEM SHOPPING TIPS

We recommend 2400-baud modems for the most common home-office uses. The 2400-baud rate is about as fast as you can transfer data over standard telephone lines without running into frequent errors. Slower rates (for example, 300 baud) result in fewer errors than faster ones (for example, 9600 baud). But if you transmit at the slower rate, it takes longer to move the same amount of information—this could mean higher phone-line and electronic-service charges, as well as longer periods of time that you can't use your computer for other work. Most modems that operate at 2400 baud (including the ones reviewed here) also let you communicate with 300-baud and 1200-baud modems; but you'll find that 2400 baud is becoming the most widely used speed.

Since the Hayes command set (a group of modem commands developed by Hayes Microcomputer Products) is the modem-industry standard, it's a good idea to purchase a Hayes-compatible modem. Then your modem can work with most microcomputer telecommunications software. The Evercom 24E, Okitel 2400, and Practical Modem 2400 SA are all Hayes compatible.



The Evercom 24E (shown with telephone) can be used as a speakerphone.

These modems, like the majority of external modems, have speakers for monitoring modem activity (for example, you can hear whether you reach a busy signal or another modem). Their automatic adaptive equalization feature compensates for noisy phone lines that can scramble data. They also automatically sense and adjust to the baud rate of the other modem.

SOFTWARE

A modem's fancier features are controlled by communications software. More and more companies are bundling their modems with software that provides basic telecommunications functions. Lower-end software can be obtained inexpensively through electronic bulletin boards and special-interest groups like PC-SIG. But for the most flexibility and the easiest and clearest user interfaces, commercial-quality software is probably your best bet. (*See "A Guide to Painless Telecommunication," page 59.*)

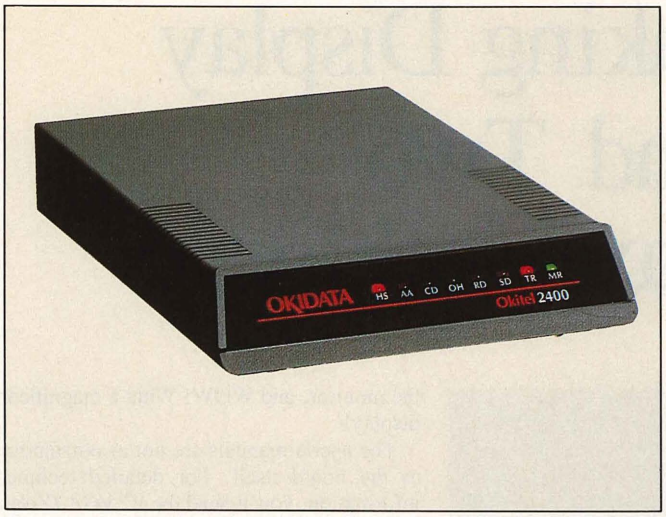
Several software packages also let you use your modem as an automatic telephone dialer: Just type in your entire Rolodex and use the modem's autodial feature to place calls. Programs like *PC Yellow Pages* are designed specifically for this purpose, and it's a useful added function of *SideKick* and *HyperCard*.

Many integrated packages, like Lotus *Symphony* and Ashton-Tate's *Framework III*, contain modules that let you communicate with other computers. But for anything more than incidental communications, you'll need a true telecommunications program like Datastorm Technologies's *ProComm Plus* or Microcom Software's *Relay*.

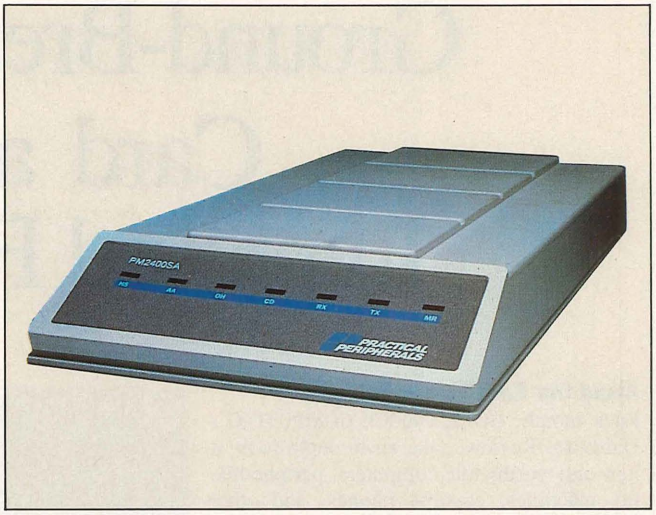
With a modem you enter a new dimension in computing. Even if you don't plan to use information services just yet, you'll find a modem handy for everyday telephone use and for file transfer between your computer and remote locations. Possible uses are countless and the cost is low enough that there isn't any reason not to try a modem.

REVIEWED IN THIS ISSUE

Display Card:
Video Seven V-RAM VGA
Modems:
Everex Evercom 24E
Okidata Okitel 2400
Practical Peripherals Practical Modem 2400 SA
Printer:
Toshiba ExpressWriter 311
Facsimile Machines:
Olympia OlyFax 200
Panasonic KX-F120 Fax + Telephone Answering System with Facsimile
Answering Machine:
Record a Call 2120



You're given some free access time on CompuServe when you purchase the Okitel 2400.



An outstanding five-year warranty helps win the Practical Modem 2400 SA four stars.

Everex Evercom 24E

RATING: ★ ★ ★

Everex's quality products and reasonable prices make it a major player in the computer add-on market.

The Evercom 24E has two switches (speaker and mute) and a small microphone on the front panel so you can use the modem as a speakerphone in a pinch. The user's manual will take you through the simple installation process with text and pictures.

Every Evercom modem comes with *BitCom*—a feature-packed, menu-driven IBM-compatible communications program; but if you prefer to use another telecommunications package, the Evercom 24E should have no problem responding to it.

The Evercom 24E is a good value. It's a sturdy unit, and *BitCom* is a desirable bonus. Everex warrants its modem for one year and provides a technical-support number.

Okidata Okitel 2400

RATING: ★ ★ ★

The Okitel 2400 is housed in a dismal, dark-gray enclosure and comes with a speaker volume control.

The user's manual is better than average, but lacks an index (Okidata says that a new manual, with an index, will be available in July). A self-test routine lets you know if the modem isn't working properly by generating a tone.

The Okitel 2400 seems to be built to high standards and should serve you well. But you will have to use it with your own software. Okidata provides a limited amount of free access time on CompuServe and offers reduced-cost subscriptions to the Dow Jones News Retrieval Service and NewsNet—claiming a total savings of about $150. The company warrants the model for two years and provides toll-free technical support.

Practical Peripherals Practical Modem 2400 SA

RATING: ★ ★ ★ ★

Practical Peripherals developed its 2400 SA to be a top contender in the modem marketplace. At $240, it is the least expensive of the three modems reviewed here.

It fares well with its outstanding five-year warranty and built-in intelligence. Normally, a modem is configured by setting DIP switches; the 2400 SA is configured by software commands. The modem remembers these settings (baud rate and speaker volume, for example) as well as a short list of phone numbers in a special internal memory.

No software is supplied with the 2400 SA, but virtually any telecommunications package will work. Practical Peripherals supplies a technical-support voice line as well as an electronic bulletin-board service. It seems like this company really cares.

A SIDE-BY-SIDE COMPARISON OF THREE 2400-BAUD EXTERNAL MODEMS

	Evercom 24E	Okitel 2400	Practical Modem 2400 SA
Manufacturer	Everex Systems, Inc. 48431 Milmont Dr. Fremont, CA 94538 (415) 683-2100	Okidata 532 Fellowship Rd. Mt. Laurel, NJ 08054 (609) 235-2600	Practical Peripherals, Inc. 31245 La Baya Dr. Westlake Village, CA 91362 (818) 706-0333
Suggested Retail Price	$350	$550	$240
Hardware Requirements	Any computer with serial port and cable	Any computer with serial port and cable	Any computer with serial port and cable
Automatic Adaptive Equalization	Yes	Yes	Yes
Automatic Speed Detection	Yes	Yes	Yes
Speaker Volume Control	Yes	Yes	Yes[1]
Dimensions (inches)	6.8-by-12-by-1.9	6.6-by-10.3-by-1.6	5.5-by-10.5-by-1.3
Warranty (years)	1	2	5
Software Included	*BitCom*	None[2]	None
Internal Version [3]	$270	$500	$200

[1]Must be adjusted through software. [2]*Okitel II* communications software included with internal version only. [3]For IBM PC/XT/AT or compatible.

Ground-Breaking Display Card and Two Improved Fax Machines

About Our Reviews and Ratings

Each month, HOME-OFFICE COMPUTING's Hardware Reviews take an in-depth look at new and worthwhile computers, peripherals, fax machines, copiers, phones, and other hardware.

Our reviewers set up the equipment in their own home offices. After heavy use and extensive testing, they rank each item on the basis of suitability for the home office and on overall value, taking into account performance, features, ease of setup, ease of learning and use, documentation, size, expandability/versatility, support, availability, warranty, and value for the money.

Then, the HOME-OFFICE COMPUTING Hardware Testing Lab conducts its own battery of tests (a printer speed test, for example) and verifies manufacturers' specifications. Finally, our technical editors weigh the reviewers' rankings, the lab test results, and their own experience to determine an overall rating on a scale of zero to four stars:

○	Poor	★★★	Very Good
★	Average	★★★★	Excellent
★★	Good		

Note on Hardware Requirements:

Any product listed as requiring an IBM PC/XT/AT or compatible should also work with an IBM PS/2 Model 25, Model 30, or Model 30 286.

High-Performance VGA Card

Video Seven V-RAM VGA

Video Seven, Inc., 46335 Landing Pkwy., Fremont, CA 94538; (415) 656-7800

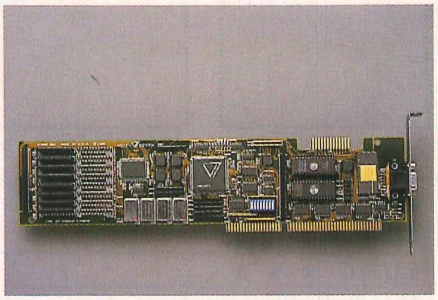
RATING: ★ ★ ★

SUGGESTED RETAIL PRICE: $799

TYPE: VGA

VIDEO MODES SUPPORTED: MDA, HGC, CGA, EGA, VGA

ADDITIONAL VIDEO MODES: 720-by-540 (16 colors), 800-by-600 (16 colors), 1024-by-768 (2 or 4 colors), 1024-by-768 (16 colors; 512K required)



MEMORY: 256K (expandable to 512K, $299)

HARDWARE REQUIREMENTS: IBM PC/XT/AT or compatible; analog monitor

DIMENSIONS: PC full length (13.2-by-3.2 inches)

WARRANTY: Five years

The Video Seven V-RAM VGA is a high-speed VGA card designed for graphics-intensive applications. It is especially useful for programs like *AutoCAD* and *Ventura Publisher*, where speed and detail really count.

The high cost and spectacular performance of this card result primarily from the Video Random Access Memory (VRAM) itself, which can operate at speeds of up to 65MHz. The VRAM allows faster information exchange between the computer, monitor, and display card than a conventional VGA card does.

In addition to its lightning-fast screen-writing speed, superior image quality, and high-resolution mode (with 512K) of 1024-by-768 (16 colors), the V-RAM VGA fully supports every element of the VGA standard, with compatibility guaranteed. To take advantage of resolution modes higher than 640-by-480, you need a variable-frequency monitor such as the NEC MultiSync II.

The card can run in IBM-compatible computers, but when installed in an AT compatible's 16-bit slot, the display is up to four times faster than with a standard VGA card.

Eight configuration switches are provided for adapting the card to your system. If you run into any problems, technical assistance is available through a toll-free number. I left the switches as they were, pulled out my old video card, plugged in V-RAM, connected the monitor, and WOW! What a magnificent display!

The user's manuals are not as outstanding as the board itself. For detailed technical information, you'll need the *V7 VGA Technical Reference Manual* ($25). The V-RAM VGA also comes with four 5.25-inch floppy disks that contain video utilities as well as drivers that let the following programs take full advantage of the higher-resolution modes: Autodesk's *AutoCAD* and *AutoShade*, Lotus *1-2-3*, Xerox *Ventura Publisher*, and Microsoft *Windows* v.2.0 or higher, *Windows/286*, and *Windows/386*.

—HENRY F. BEECHHOLD

A Portable 24-Pin Printer

Toshiba ExpressWriter311

Toshiba America Information Systems, Inc., 9740 Irvine Blvd., Irvine, CA 92718; (714) 583-3000

RATING: ★ ★

SUGGESTED RETAIL PRICE: $589

HARDWARE REQUIREMENTS: IBM PC/XT/AT or compatible with parallel port and cable

TYPE: 24-pin dot matrix

DRAFT SPEED (PICA): 150 cps

NEAR-LETTER-QUALITY SPEED (PICA): 50 cps

GRAPHICS RESOLUTION: 360-by-360 dots per inch

PAPER WIDTH: Minimum: 4 inches; maximum: 10 inches

FEED MECHANISM: Pull tractor and friction

EMULATIONS: Epson LQ series; IBM Proprinter; Toshiba/Qume

OPTIONS: Font cards ($79 each), font diskettes ($35 each), 32K add-on memory card ($99)

DIMENSIONS: 16-by-12.7-by-4.7 inches

WARRANTY: One year

The ExpressWriter311 is a low-priced, feature-packed 24-pin dot-matrix printer from Toshiba. Like most 24-pin printers, it can produce near-letter-quality text and respectable graphics.

Generally, 24-pin printers are large, heavy machines that cost from $700 to $1,500. But

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CIRCLE READER SERVICE 45



the ExpressWriter is small, light, and relatively low priced at $589. These features are designed for today's space- and budget-conscious offices.

A number of the 311's other features stand out: the three built-in printer emulations; the 16K print buffer (ample for the price); and the three resident fonts (High-Speed Draft, Courier, and Prestige Elite).

But the printer's strongest point is its ergonomic design. It weighs only 11 pounds (most high-quality 24-pin printers weigh about 18 pounds) and has a handle built into the front for easy carrying. Also provided for portability are a retractable platen knob and a small compartment underneath the adjustable sheet guide for storing the power supply and cord.

The ExpressWriter311 is a sleek, smooth-printing, smartly priced printer with plenty of nice touches, but be careful with its tractor-feed mechanism—it doesn't seem to be constructed as well as others Toshiba makes, and it may cause paper-jamming problems.

—ROBERT GEHORSAM

Olympia Builds A Better Fax Machine

Olympia OlyFax 200
AEG Olympia, Inc., 3140 Route 22, Somerville, NJ 08876; (201) 231-8300

RATING: ★ ★

SUGGESTED RETAIL PRICE: $1,895

COMPATIBILITY: Group 3, Group 2

DOCUMENT WIDTH: 5.9-to-10.1 inches

RECORDING PAPER SIZE: 8.5 inches by 98 feet (roll)

MODEM SPEED: 9600 baud (automatic fallback)

PRINTING METHOD: Thermal

DISPLAY: 16-character LCD

RESOLUTION: Standard (203-by-98), fine (203-by-196), and superfine (203-by-392)

AUTOMATIC DOCUMENT FEEDER: Five pages

FEATURES: Activity reports; automatic redial; confidential transmission; copy function; delayed transmission; 16-shade halftones; normal, secure, and turnaround polling; relay broadcasting; 20 one-touch and 80 speed-dial numbers; terminal identification

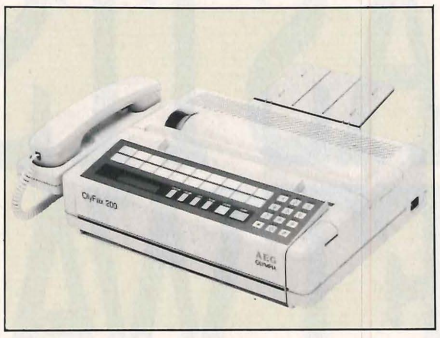
DIMENSIONS: 15.9-by-9.8-by-4.1 inches

WARRANTY: 90 days

Olympia's first consumer fax machine, the OlyFax 100 (*see review in the January issue, page 66*), was difficult to operate, came with poor documentation, and lacked important features such as a telephone handset and delayed transmission.

Shortly after our OlyFax 100 review was written, Olympia introduced the OlyFax 200. Like its predecessor, the 200 has all the features commonly found on basic facsimile units, including speed dialing and copy mode. But the OlyFax 200 is a better machine.

The operator panel is easier to use and understand, and the five-page document feeder is more reliable. Olympia has also included most of the features left out of the 100: Delayed transmission and a built-in handset are the most significant additions; halftone and polling capabilities also increase the 200's value and usefulness.



With delayed transmission, you can send a fax any time, whether or not you are present. The machine can work 24 hours a day, and you can use your time more productively.

Graphic artists and others who send and receive photographs will appreciate the superfine resolution and 16-shade halftone capability. Photographs will be sharper when your OlyFax is communicating with a similar machine.

Three types of polling—normal, secure, and turnaround—have been added to the OlyFax 200. Normal polling is calling another fax machine and requesting a document. Secure polling requires that a secret code be sent in order to receive the document. And with turnaround polling you can send and receive documents in one call. The 200 is also able to transmit confidential documents to OlyFax 725s.

Unfortunately, Olympia has not significantly improved the documentation for the OlyFax 200. Although the manual is better than before, it's still confusing. The OlyFax 200 could be a useful addition to your office, if you can figure out how to use it.

—STEVE USDIN

Panasonic Puts It All Together

Panasonic KX-F120 Fax+ Telephone Answering System with Facsimile
Panasonic Industrial Co., One Panasonic Way, Secaucus, NJ 07094; (201) 348-7000

RATING: ★ ★ ★ ★

SUGGESTED RETAIL PRICE: $1,695

COMPATIBILITY: Group 3, Group 2

DOCUMENT WIDTH: 5.9-to-10.1 inches

RECORDING PAPER SIZE: 8.5 inches-by-98 feet (roll)

MODEM SPEED: 9600 baud (automatic fallback)

PRINTING METHOD: Thermal

DISPLAY: 15-character LCD

RESOLUTION: Standard (203-by-98) and fine (203-by-196)

AUTOMATIC DOCUMENT FEEDER: Five pages

FEATURES: Automatic redial, automatic voice and data switching, copy function, delayed transmission, 16-shade halftones, speakerphone with mute control, 10 one-touch and 100 speed-dial numbers, terminal identification

ANSWERING MACHINE FEATURES: Auto-Logic, memo record, 1,000 programmable ID codes, recordable outgoing-message chip, tone remote-control system, two-digit call counter

DIMENSIONS: 14.3-by-10.2-by-4.5 inches

WARRANTY: One year

I fell in love with the predecessor of the Panasonic KX-F120 Fax+ Telephone Answering System with Facsimile, the KX-F115, despite its shortcomings: It was big and bulky and took up almost as much room as my computer. A couple of the more important controls were on the side of the unit and difficult to use on a cramped desk. And the speakerphone sounded tinny.

The KX-F120 remedies these problems. It is about two-thirds the size of the KX-F115, and most of the function keys are on the front



for easy access. Also, Panasonic added so many new features that the KX-F120 can handle almost all your telephone needs.

First, Panasonic included a telephone that is almost as good as its Easa-Phone line. The sound quality is no longer tinny, and the KX-F120 can store more than 100 numbers for speed dialing. Each of the 10 one-touch dial-

ing keys stores a phone number and a fax number. When you have a document in the fax holder, the telephone automatically dials the fax number when you depress the key.

The KX-F120's integrated answering machine works as well as, if not better than, many stand-alone answering machines. Its beeperless remote capability lets you control all of its features from any touch-tone phone. In fact, using the remote is the only way you can skip messages that you've already heard. Using the buttons on the unit itself, you have to use fast forward and guess where the message you want to hear is located.

The facsimile-machine component of the unit effortlessly handles most small-business functions. The KX-F120 does not have some of the advanced features that high-end fax machines have, such as polling (calling a fax machine to request a document) and broadcasting (sending the same document to more than one location), but most of us can live without these features.

I am especially impressed with the way Panasonic integrated the answering machine and the fax machine. When the phone rings, the KX-F120 answers and delivers your outgoing message, then waits. If it hears a voice within five seconds, it records the message; otherwise, the fax function takes over. This makes it possible for many home businesses to control communications without a dedicated fax line.

Finally, the operator's manual is well written and easy to understand. Panasonic paid attention to all the details when they designed the KX-F120. It is a solid performer.

—STEPHEN MILLER

Exceptional Two-Line Answering Machine

Record a Call 2120

Record a Call, 19200 South Laurel Park Rd., Compton, CA 90220; (213) 603-9393

RATING: ★ ★ ★ ★

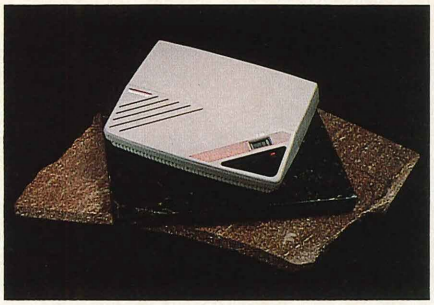
SUGGESTED RETAIL PRICE: $150

TYPE: Two-line answering system

FEATURES: Beeperless remote, built-in microphone, two-digit LCD message counter, LED indicators, memo record, pause during playback, Power-Fail Memory, Remote Turn-on, ring selector, Step Saver, Remote Toll Saver, two cassettes, voice-activated recording

DIMENSIONS: 9.7-by-7.9-by-2.3

WARRANTY: One year



You are probably tired of the phrase *user friendly*. Almost every manufacturer uses it and it usually doesn't apply.

The Record a Call 2120 two-line answering machine truly is user friendly. You simply plug in the phone line and turn on the power, and you're set. You can use the prerecorded message that comes with the machine or record your own by holding down the ANNC button (under the lid) while speaking into the microphone.

I was impressed with the overall quality of the 2120. It has a sturdy feel and a sleek, compact design. Most of the control buttons and switches are hidden in either the back or side of the machine. The front of the 2120 features only a two-digit LCD message counter, three LED indicators (one indicates that the power is on and two tell you which line is being answered), and the playback button.

But the 2120's two-line capability, Step Saver, and beeperless remote features set it apart from the competition. Most answering machines can answer only one telephone. The 2120 can answer just one or both of your telephone lines; you direct it with a switch on the back.

Do you ever pick up the telephone after the answering machine does? You probably tell the person to hold on while you turn off the machine. The Step Saver makes it easy to intercept a call—it automatically turns off the 2120 when you pick up any extension on the same line.

The 2120's beeperless remote feature is more versatile than others. It features a three-digit secret code you punch into any touch-tone phone. Once the machine accepts the code, you are able to turn on the machine, retrieve your messages, and even change your outgoing message.

Rounding out the list of features are memo record, which allows you to record a conversation or a note to yourself; power-failure memory, which automatically resets your machine in case of a power interruption; and Remote Toll Saver, which saves you the cost of a call if you have no messages to retrieve.

Overall, I found the Record a Call 2120 to be an exceptional answering machine, and its two-line capability makes it a natural for the home office.

—ANDREW GAFFNEY

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BEST-SELLING SOFTWARE



These best-seller lists, prepared exclusively for HOME-OFFICE COMPUTING *by Egghead Discount Software, are based on March sales at 195 Egghead stores in the United States and Canada.*

IBM

BUSINESS

1. Lotus 1-2-3 v2.01
   Lotus Development Corp.
2. TurboTax Federal
   ChipSoft
3. TurboTax California Supplement
   ChipSoft
4. WordPerfect v5.0 & v4.2
   WordPerfect Corp.
5. ProComm Plus v1.1
   Datastorm Technologies
6. Sideways v3.2
   Funk Software
7. Windows/286 v2.10
   Microsoft Corp.
8. Allways
   Funk Software
9. dBase IV
   Ashton-Tate
10. Freelance Plus v3.0
    Lotus Development Corp.

HOME/SMALL BUSINESS

1. The Print Shop w/Graphics Library
   Broderbund Software
2. Managing Your Money v4.0
   MECA
3. Calendar Creator Plus
   Power Up Software Corp.
4. Will Maker v3.0
   Nolo Press
5. Micro Cookbook
   Pinpoint Publishing
6. Dream House
   ComputerEasy Int'l.
7. Address Book Plus, Sr.
   Power Up Software Corp.
8. Certificate Maker
   Springboard Software
9. Print Magic
   Epyx
10. NewsMaster II
    Unison World Software

EDUCATION

1. Learning DOS v2.0
   Microsoft Corp.
2. Math Blaster Plus
   Davidson & Associates
3. Where in the World Is Carmen Sandiego?
   Broderbund Software
4. Where in the USA Is Carmen Sandiego?
   Broderbund Software
5. Reader Rabbit
   The Learning Company
6. Think Quick!
   The Learning Company
7. Sesame Street Letters For You
   Polarware Software
8. Typing Tutor IV
   Simon & Schuster
9. Math Rabbit
   The Learning Company
10. Alge-Blaster!
    Davidson & Associates

ENTERTAINMENT

1. Flight Simulator v3.0
   Microsoft Corp.
2. F-19 Stealth Fighter
   MicroProse Software
3. T.V. Game Shows
   ShareData
4. Jack Nicklaus' Golf
   Accolade
5. Tracon
   Polarware Software
6. Grand Prix Circuit
   Accolade
7. Scrabble
   Electronic Arts
8. Hardball
   Accolade
9. Advanced Dungeons & Dragons Pool of Radiance
   Strategic Simulations/EA
10. Test Drive
    Accolade

MACINTOSH

BUSINESS

1. Excel v1.5
   Microsoft Corp.
2. MacDraw II v1.1
   Claris Corp.
3. Tops v2.1
   Tops, Inc.
4. PowerPoint v2.01
   Microsoft Corp.
5. Word v3.01-v3.02
   Microsoft Corp.
6. PageMaker v3.0
   Aldus Corp.
7. S.U.M.
   Symantec Corp.
8. Suitcase II v1.2
   Fifth Generation Systems
9. Works v2.0
   Microsoft Corp.
10. File Maker II
    Claris Corp.

HOME/SMALL BUSINESS

1. Quicken v1.0
   Intuit
2. MacInTax Federal
   Softview, Inc.
3. The Print Shop
   Broderbund Software
4. SuperPaint v2.0
   Silicon Beach Software
5. MacInTax California Supplement
   Softview, Inc.
6. Calendar Creator v1.0
   Power Up Software Corp.
7. WetPaint/Vol 1&2
   Dubl-Click Software
8. World Class Fonts!/Vol 1&2
   Dubl-Click Software
9. Poster Maker Plus
   Broderbund Software
10. WillMaker v3.0
    Nolo Press

EDUCATION

1. Where in the World Is Carmen Sandiego?
   Broderbund Software
2. Mavis Beacon Teaches Typing
   The Software Toolworks/EA
3. Manhole
   Mediagenic
4. NumberMaze
   Great Wave Software
5. Reader Rabbit
   The Learning Company
6. Math Blaster!
   Davidson & Associates
7. Type!
   Broderbund Software
8. HyperTutor
   Power Up Software Corp.
9. Once Upon a Time . . .
   Compu-Teach
10. Kids Time
    Great Wave Software

ENTERTAINMENT

1. Falcon v2.0
   Spectrum HoloByte
2. Hunt for Red October
   Datasoft/EA
3. Life & Death
   The Software Toolworks/EA
4. Flight Simulator v 1.02
   Microsoft Corp.
5. Déjà Vu II
   Mindscape
6. The Toy Shop
   Broderbund Software
7. Colony
   Mindscape
8. Hitchiker's Guide to the Galaxy
   Infocom/Mediagenic
9. Leisure Suit Larry
   Sierra On-Line
10. Dark Castle
    Silicon Beach Software

APPLE

BUSINESS

1. Copy II Plus
   Central Point Software
2. AppleWorks v2.1
   Claris Corp.
3. WordPerfect v1.1 & v2.0
   WordPerfect Corp.
4. TimeOut QuickSpell
   Beagle Brothers
5. Publish-It! v2.0
   Timeworks
6. AppleWorks GS
   Claris Corp.
7. TimeOut UltraMacros
   Beagle Brothers
8. List & Mail
   Avery
9. TimeOut Thesaurus
   Beagle Brothers
10. GEOS
    Berkeley Softworks

HOME/SMALL BUSINESS

1. The Print Shop w/Graphics Library
   Broderbund Software
2. Quicken
   Intuit
3. Bank Street Writer Plus
   Broderbund Software
4. The Print Shop Sampler Graphics
   Broderbund Software
5. The Print Shop Companion
   Broderbund Software
6. Print Magic
   Epyx
7. Cartooners
   Electronic Arts
8. The Print Shop Party Graphics
   Broderbund Software
9. Managing Your Money v3.0
   MECA
10. MultiScribe v3.0
    StyleWare/Claris Corp.

EDUCATION

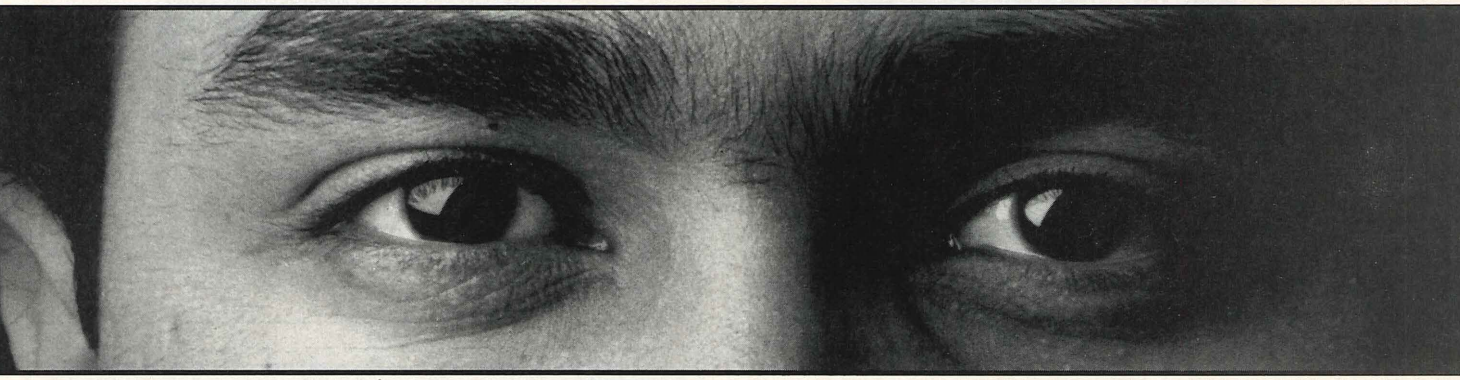
1. Where in the USA Is Carmen Sandiego?
   Broderbund Software
2. Math Blaster Plus
   Davidson & Associates
3. Where in the World Is Carmen Sandiego?
   Broderbund Software
4. Think Quick!
   The Learning Company
5. Children's Writing & Publishing Center
   The Learning Company
6. Mavis Beacon Teaches Typing
   The Software Toolworks/EA
7. The Oregon Trail
   MECC
8. Sesame Street Letters For You
   Polarware Software
9. Reader Rabbit
   The Learning Company
10. Mixed-Up Mother Goose
    Sierra On-Line

ENTERTAINMENT

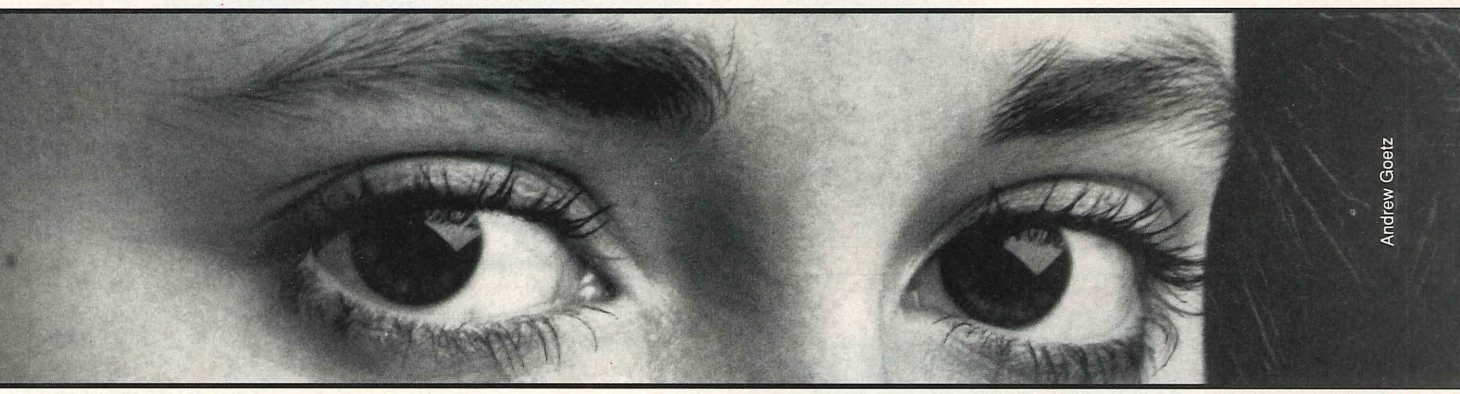
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   Buena Vista
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7. Zany Golf
   Electronic Arts
8. Test Drive
   Accolade
9. Choplifter and David's Midnight Magic
   Broderbund Software
10. Hunt for Red October
    Datasoft/EA



Yesterday, this woman gained access to classified information.



This morning, this man caused an international incident.



Andrew Goetz

And last night, this woman had a rendezvous with a mysterious stranger.

A cunning spy? An exiled ambassador? A passionate temptress? No—none of the above.

In truth, these "shadowy figures" are three people who have discovered ***Aline***—the on-line meeting place that offers a unique selection of services for people with PC's.

The woman who accessed "classified information" was simply checking her electronic mailbox—she was pleased to find many responses to the classified ad she placed last week.

The man who caused the "international incident" was having a keyboard chat with a friend in Paris—apparently they couldn't agree on whose country made better wine.

And the "seductress" in question met a great guy on ***Aline***'s interactive personals—they're having drinks next week.

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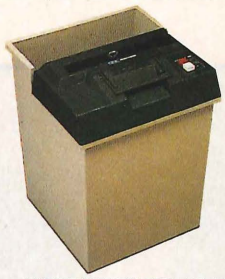
BY MARIE ALVICH



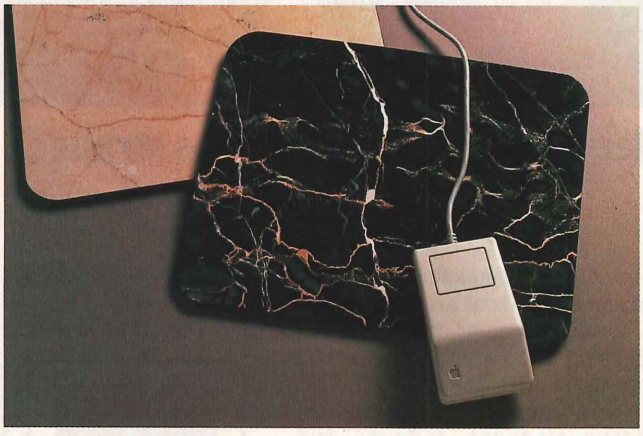
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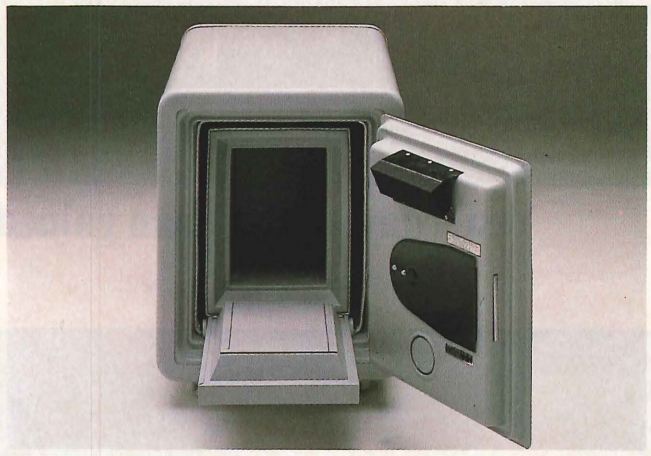
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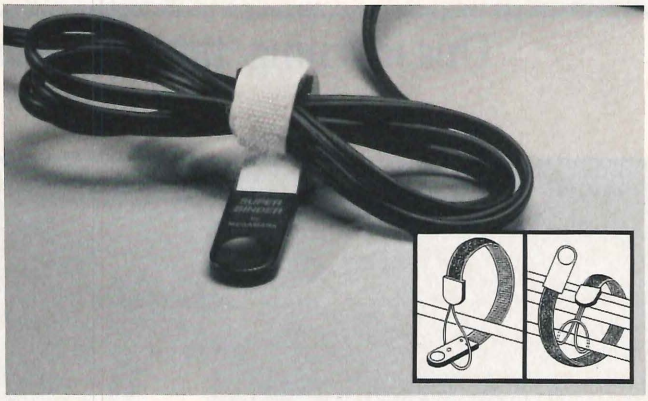
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MARIE ALVICH *is associate technical editor for* HOME-OFFICE COMPUTING.



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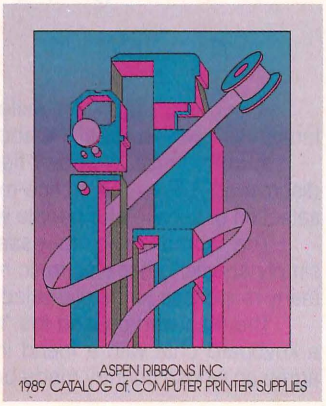
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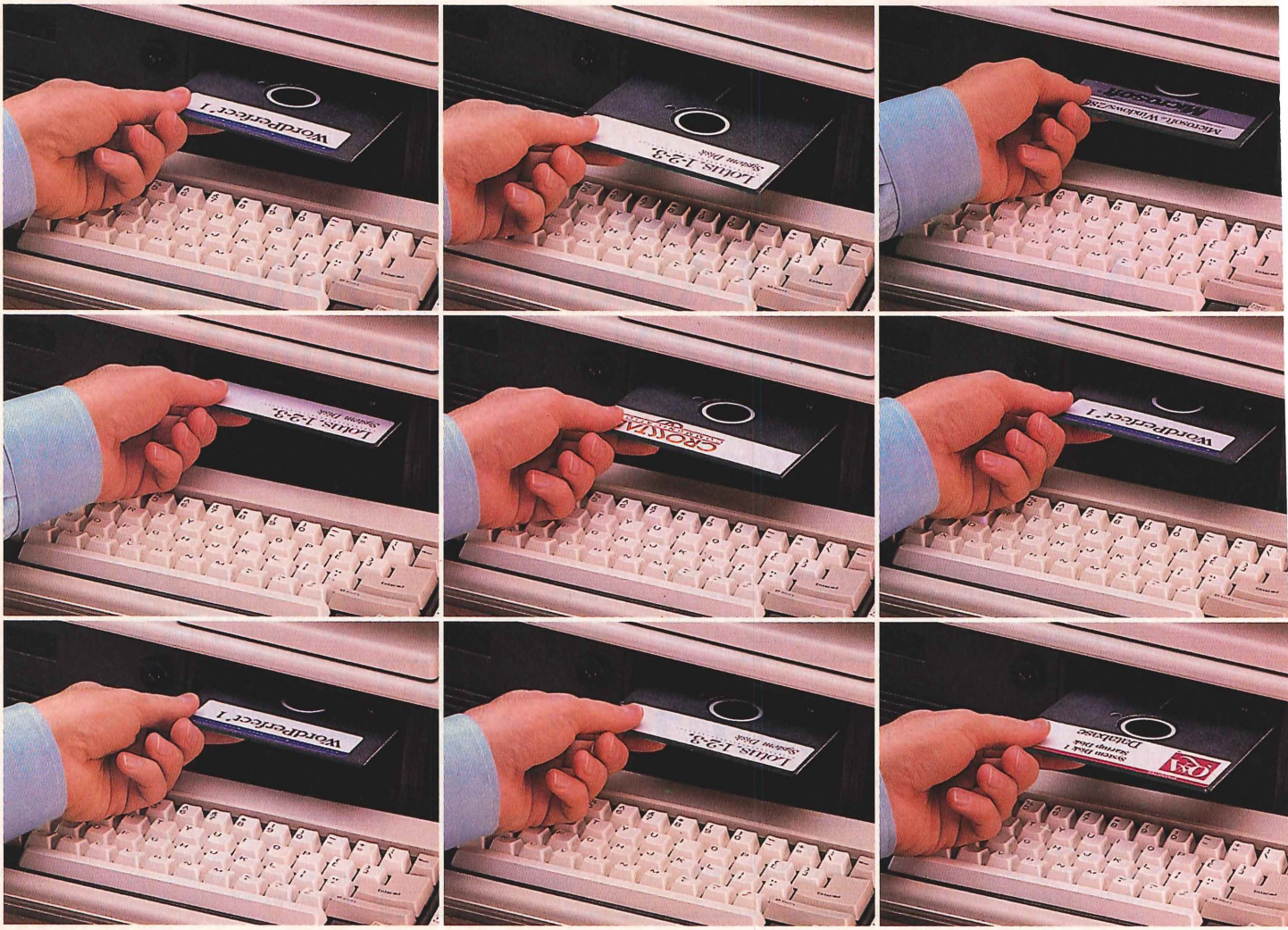
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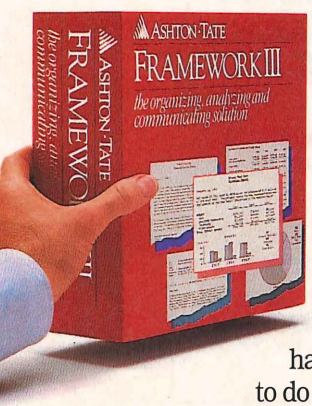
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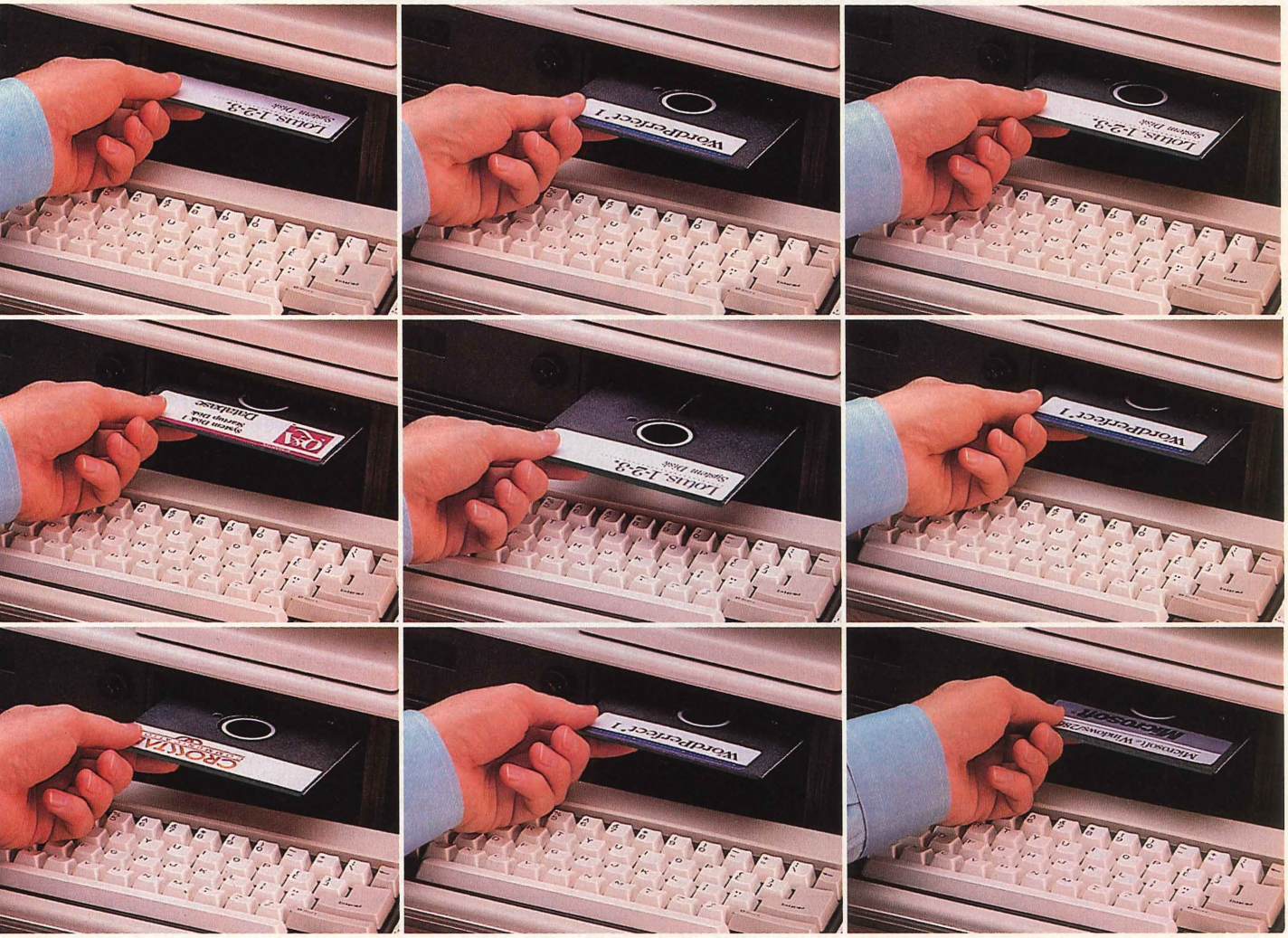
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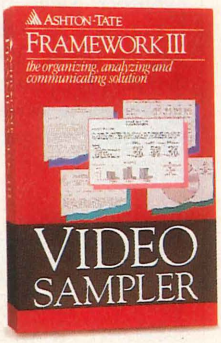
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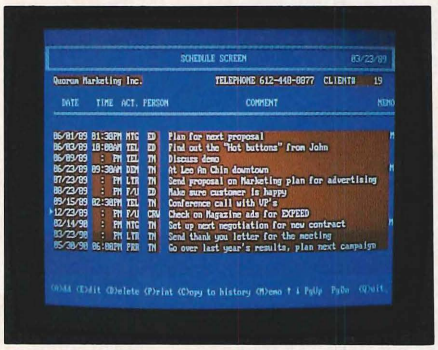
Track Detailed Records With Databases for Mac and MS-DOS

Plus: Nine More Reviews

Our reviews of application software use shorthand to describe several of the details associated with any package. This is particularly true under "System Requirements"—where the minimum system configuration is noted—so we have provided the following table of computers for you to refer to as needed. Hardware, software, and memory are required unless noted as "recommended" or "optional." When more than one computer is listed under "System Requirements," the machine marked with an asterisk (*) is the type on which the software was reviewed. Requirements are *not* listed where obvious (for instance, printers with word processors or modems with communications programs). Operating system requirements, such as MS-DOS or the Macintosh System file, are listed only when they're not the standard, minimum requirement (DOS 2.0 for IBM PC or compatibles, System 3.2 for the Macintosh, or ProDOS for the Apple II). For those computer systems that can use both 5.25- and 3.5-inch disks (IBM PC and PS/2 or the Apple II), we've listed only those disk sizes that are either supplied with the software or available at no extra cost from the publisher. Since most productivity software is not copy protected, we have indicated—with the letters "CP"—only those programs that are copy protected. The version listed is the version reviewed; publishers may release subsequent versions at any time.

Designation	Models
128K Apple	IIe/IIc/IIGS (in IIe/c mode) and compatibles
128Ke Apple	IIe (enhanced ROM)/IIc/IIGS(in IIe/c mode)
Apple IIGS	IIGS only
IBM PC, PS/2	PC/XT/AT, PS/2 and compatibles
128K Macintosh	128K/512K/512Ke/Plus/SE/II
512K Macintosh	512K/512Ke/Plus/SE/II
512Ke Macintosh	512Ke/Plus/SE/II
1MB Macintosh	Plus/SE/II

Ratings Key: ○ Poor; ★ Average; ★★ Good; ★★★ Very Good; ★★★★ Excellent



The Schedule Screen is one of Eighty/20*'s methods for organizing your work.*

Eighty/20

VERSION REVIEWED: 2.1

SYSTEM REQUIREMENTS: 640K IBM PC or PS/2; two drives, 720K minimum (hard-disk drive recommended); DOS 2.1 or higher; 5.25-inch and 3.5-inch

PUBLISHER: Marcar Personal Computing, 1107 Hazeltine Blvd., Chaska, MN 55318; (612) 448-8849

PRICE: $495

OVERALL PERFORMANCE: ★ ★ ★

DOCUMENTATION: ★ ★

ERROR HANDLING: ★ ★ ★ ★

EASE OF USE: ★ ★ ★

SUPPORT: ★ ★ ★ ★

Eighty/20 is a business system designed explicitly for time-and-client management, making it a potentially valuable tool for salespeople, professionals who bill by the hour, and others whose work demands heavy people contact. The package provides automated mailing lists, interactive data storage and retrieval, daily scheduling, basic word processing with business-letter creation and mail-merge operations, and report generation.

A menu-driven database built around predesigned data-entry screens, the program lets you start doing useful work almost immediately after you've booted it up for the first time. Each menu leads to a submenu until you've reached your destination. It's a little confusing here and there about what you're expected to type in, but a quick check in the manual will clear up any minor questions.

Once you've got an idea of exactly what to expect from *Eighty/20*, your work amounts to little more than typing in the data. Since *Eighty/20* works like a relational database, anything entered in one place can be accessed somewhere else. Thus you can search your client file through a filter if you wish—such as, just the clients living in Chicago—and dump that data into, say, your mailing list, which can be used to generate personalized form letters, mailing labels, and envelopes.

Programs controlled via menus tend to run more slowly than those in which functions are accessed by command keys, and *Eighty/20*—with only six command keys—is no exception. However, within a given menu (for example, the Add/Edit/Inquire Clients menu), the program zips right along.

When in the Maintenance Menu, you can select or change the default printer. Unfortunately, only a few printers are directly supported. If yours isn't listed, try one of the choices offered, otherwise you'll have to enter the control codes necessary for your printer, using its manual to guide you. Whatever printer you use, printing options are limited—nothing fancy here, just basic letter writing. Forget laser-printer wonderfulness! As a matter of fact, leaving a proportional font cartridge in place will result in a messy looking printout because *Eighty/20* can't deal with proportional type. You have to use the laser printer's native nonproportional font.

But this program is meant primarily for organizing your business, not for full-blown word processing. Although the Report function is a major activity, the printouts are meant to furnish the information you seek—not to serve as public documents. *Eighty/20* gives you a variety of practical printout (or screen-display) options, including calendars and schedules, various kinds of statistical reports, letters, memos, client history, and so on. Certain reports allow for detail or summary information and for alphabetical, numeric, or zip-code sorting.

The documentation's three-ring, imitation-leather, zippered binder gives the manual an impressive look. The pages themselves, however, are far less impressive than one would expect from such an expensive program. The text dividers are slickly printed, but the text looks like an inelegant desktop-publishing effort. The quality of the writ-

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IBM version requires IBM, Tandy or compatible computer with 256k or more memory, two floppy disk drives or floppy disk drive and hard disk drive, and DOS Release 2.0 or later. (A hard disk drive is recommended but is not required.)

Macintosh version requires 512k or more memory and works with any disk drive configuration.

ing and information presented is acceptable. The generous use of screen snapshots gives an accurate representation of the program at work.

In a given menu, the program prevents you from entering an unacceptable choice. If for some reason a required file is missing (commonly either a data or an index file), you'll be told. Another common mistake is the failure to turn on the printer prior to requesting a printout. Happily, *Eighty/20* will trap the error and remind you rather than just wander off, as some programs do, into nowhere. There really seems to be no way to crash the program short of accidentally pressing your computer's reset button.

In addition to the 90-day free replacement warranty, the publisher provides a toll-free customer-support number with no strings—such as a time limitation—but your copy of the program must be registered, and you must provide your serial number prior to each consultation. Upgrades resulting from corrections of bugs will be sent free to registered users. Marcar has announced that if a new version of the program is developed, currently registered users will be offered a special purchase discount.

At $495 for the core program, plus $1,388 for the five optional modules and three utilities, this is an expensive package. In a sense, *Eighty/20* is an elaborate and intelligent Rolodex and, as such, could be of great value to any business with a large client list, frequent client mailings, and numerous schedule-related activities. With the extra-cost add-ins, it provides a complete system for expense tracking, product listing, price quoting, telemarketing, and time billing.

My principal problem with this package is its cost. There are many programs that can do most of what *Eighty/20* does, at a fraction of the cost. That this program is highly focused and integrated into a single coherent system is certainly in its favor, though. There's a demo disk available for $10; you should probably look it over before writing out the big check. —HENRY F. BEECHHOLD

FileMaker II

VERSION REVIEWED: 1.0

SYSTEM REQUIREMENTS: 1MB Macintosh; two drives (hard-disk drive recommended); System 4.2 or higher

PUBLISHER: Claris Corporation, 5201 Patrick Henry Dr., Box 58168, Santa Clara, CA 95052; (408) 727-8025

PRICE: $299

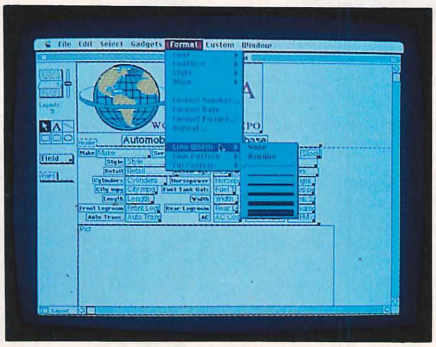
OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

ERROR HANDLING: ★ ★ ★

EASE OF USE: ★ ★ ★ ★

SUPPORT: ★ ★ ★



FileMaker II *gives you a high degree of control over how a report looks.*

Nearly every business needs to organize and store information: customer lists, prospect mailing lists, overdue accounts, sales records, invoices, inventory, personnel records, and purchases are common examples. However, the degree of flexibility and power needed to do these key jobs varies widely. Managing information is most frequently done with database software that lets you create customized files for entry, manipulation, and reporting of business information. That's exactly what *FileMaker II* for the Macintosh is designed to do.

First, you analyze your informational needs. Let's say you run a crafts business from your home. Theoretically, you could set up a single master file of all customers, prospects, and suppliers. You design a basic input format by assigning the person's name, company, address, and so on, including the kind of entry—that is, customer, prospect, or supplier. Now you set about designing the various forms and records that you want: for example, lists of mailing labels, invoices, purchase-order forms, packing lists, shipping papers, and even personalized form letters.

In designing these records and specialized forms, you determine where on the page you want each piece of information to be printed, then move the data field to that area. You can make it any size you wish, and you can make the fields print next to each other as you would want to do with city, state, and zip-code fields. And you are free to move these around or completely eliminate certain fields as needed.

FileMaker II also includes most of the features Macintosh users expect: You can change fonts, sizes, and styles; include graphics as part of the data; and add headers and footers as well. Thus, you can easily create an invoice form with your company's name—including the logo—as a part of the header. Graphics can be sized easily to fit your needs. You can even show a graphic diagram of an item you are invoicing. There's a built-in T square and "snap-to" grid to help you line up images; and you can add rules, boxes, and patterns for graphic enhancement.

Of course, an important function of any database is its ability to process and manipulate the information. *FileMaker II* offers many possibilities, including the ability to divide text fields into separate segments (handy for alphabetizing lists of names when you originally entered them as a single unit; for instance, turning Steven Nelson into Nelson, Steven as two separate fields). You can also search and gather just those records that have data entered in a particular field (customers would have information entered in their "date ordered" field, for example) or data that falls between defined limits (useful, say, for finding customers who are overdue in payments).

There are several mathematical formulas available. For instance, your sales commissions can be automatically calculated by totaling your billings, multiplying them by the sales commission rate, and deducting accumulated expenses. Or a weekly salary can be calculated from the total hours worked, figuring in both straight and overtime rates and deducting insurance contributions, Social Security, and income tax. There's enough variety in *FileMaker II*'s calculation formulas to handle most common home-business needs.

One of the advanced features is the use of scripts—often called macros—to automate certain steps. For instance, you could create a script to switch the report layout to a mailing-label format, change the Page Setup menu to the settings for printing mailing labels, retrieve the proper records for the mailing, sort them in zip-code order, and preview the labels before printing. Once a script is set up, it can be invoked with a single menu choice.

File handling is also a *FileMaker II* strength. Data can be exported to Microsoft *Word* as part of a mail merge, in a tab- or comma-delimited text file, or in the SYLK format accepted by many spreadsheets (including *Excel*). Data may be brought into *FileMaker II* as ASCII text, BASIC, or SYLK files.

A fairly well indexed, 425-page spiral-bound book accompanies *FileMaker II*; and there is an on-line help file, too. Documentation is noteworthy for a program as rich in features as this. The package also comes with several predesigned templates set to handle many of the tasks common to businesses, such as customer lists and inventory. The templates are convenient for getting started if they suit your needs.

The program handles errors well and generally asks for confirmation when you undertake a function that could permanently lose data. The typical Macintosh Undo feature works well.

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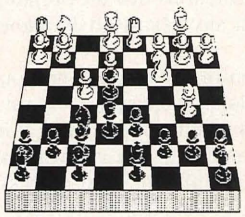
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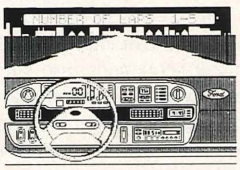
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20 or more	$2.49 ea.

GAMES

ARCADE GAMES (106) Has Kong, 3-D Pacman, Bricks, Pango. (Requires color.)
BASIC GAMES (107) Pacman, Lunar Lander, Startrek, Meteor, Breakout, and others.
CARD GAMES (109) Canasta, hearts, draw poker & bridge.
STRIKER (110) Defender-like game. "Top Gun" in space.
FLIGHTMARE (112) Futuristic fighter pilot game. (Requires color graphics adapter.)
SLEUTH (117) Who done it?
DND (119) Like Dungeons and Dragons.
ROUND 42 (120) Better than Space Invaders. 42 levels.
GAMES IN BASIC (124) Lander, biorhythms, desert, Phoenix, Star Wars, others.
QUEST (152) Role playing adventure fantasy game. (Requires CGA.)
SPACE WAR (158) Dogfight in outer space, using phasers, photon torpedoes, etc.
BRIDGE PAL (171) Complete game of contract bridge, with tutorial.
FENIX (193) Just like the famous arcade game.
PINBALL GAMES (197) Pinball, Rain, Twilight Zone, Wizard, etc.
KID-GAMES (GAM8) Animals math, clock game, alphabet, etc.
CHESS (GAM9) Incredible. 2D and 3D. Many levels. Play back moves, store games.



EGA RISK (GAM11) World domination in great color. Includes EGA Asteroids.
PC PRO-GOLF (GAM27-28) Great graphics. Complete 18 hole, 72 par course. (CGA)
PEARL HARBOR (GAM32) Shoot down Jap Zeros before they destroy U.S. Fleet. (CGA)
ULTIMA 21 DELUXE (GAM34) Best Blackjack game around. Includes Video Poker.
FORD SIMULATOR (GAM37) Great driving simulation. (Requires CGA).



MUSIC

PIANOMAN 4.0 (301) Turn your keyboard into a piano.
PC-MUSICIAN (302) Compose, save, and play music.

WORD PROCESSING

PC-Write 3.0 (434, 435, 436) (3 disks) Newest version! Very popular and complete. Includes spelling checker.
PC-TYPE+ (421-423) (3 disks) Excellent. Includes mail merge, 100,000 word spelling checker. Interfaces with PC-File+, PC-Style.
MAXI-MAX (432) 59 macros to use with Word Perfect 4.2 or later. 11 templates for forms, border designs, etc.

GRAPHICS

KEYDRAW CAD SYSTEM (1001, 1002, 1065, 1066) (4 disks) Popular. Also uses mouse. (Requires color graphics).



SIDEWAYS (1007) Prints text sideways. Useful for Lotus.
SIMCGA/HGCIBM (1027, 1062) (2 disks) Use with Hercules graphics card/compatible to run programs requiring CGA on your monochrome PC.
IMAGE 3-D (1048) Create and edit 3-D objects. Move, scale, rotate and tip image.
FINGERPAINT (1050) Use keyboard or mouse to draw. Like MacPaint. (Requires CGA or EGA).
DANCAD 3-D (1051, 1052) (2 disks) Create 3-D graphics. Rotate, magnify, etc. Runs on CGA, EGA, or Hercules.
FANTASY (1057) Create flowing graphic images with mouse or keyboard. (CGA).
FLOWCHARTING (1078-1079) Complete system for flow charts, organizational, electrical, etc., with symbols.

SPREADSHEETS

AS-EASY-AS (505) Great. Includes screen help menus. Utilizes function keys. A Lotus clone that reads Lotus files.
PC-CALC+ (512-514) (3 disks) Jim Button's famous Lotus clone.

BASIC

PC-PROFESSOR (1401) BASIC tutorial. Good.
BASIC PROGRAM GENERATOR (1402) The menu driven way to write programs.
B-WINDOW (1407) Give windowing capabilities to your Basic program.

UTILITIES

HOMEBASE (2608, 2612, 2613) (3 disks) Complete desktop organizer. Great.
PROFESSIONAL MASTERKEY (2805) Like Norton's. Retrieve deleted files. A lifesaver.
BAKER'S DOZEN (2821) 13 utilities from Buttonware.
AUTOMENU (3003) Make PC menu driven. Incl. passwords.
SCREEN (3006) Save your monitor from screen burn-in.
DOT MATRIX FONTS (3061-3062) (2 disks) Print your test in different fonts.

ACCOUNTING/FINANCE

MARKET CGA (BUS17) Performs sophisticated analysis on stocks, funds, etc. (EGA version is BUS16).
BILLPOWER+ (BUS 40, 41) (2 disks) Bill clients for time and materials, advances, retainers, etc. Computes, taxes, past due interest, etc. Has full G/L.
CPA LEDGER (706-708) (3 disks) Complete general ledger for corporations, partnerships or sole proprietors.
PERSONAL FINANCE MANAGER (715) Household budget manager. Track checking, savings, investments.
PAYROLL USA (725-726) Up to 2,000 employees in any state. dBaseIII and Lotus compatible. Complete P/R system.
EXPRESS CHECK (786) Check account with running balance, monthly reports, etc. Prints checks.
FINANCE MANAGER II (774-775) (2 disks) For personal or small business financial management.

DOS

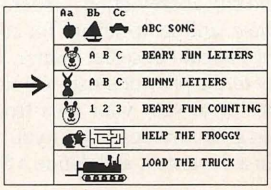
DOS TUTORIAL (1301) Teaches you to use DOS.
STILL RIVER SHELL (1304) Run DOS commands from a menu. Makes DOS easy.
BATCH FILE TUTORIAL (1305) Utilize batch file processing.
MORE DOS TIPS (1318, 1323) (2 disks) More about DOS.
HELP DOS (1326) On line DOS help with menus. Includes DOS dictionary of terms and a hints menu.

RELIGION

THE BIBLE (3301-3306) (6 disks) Old Testament, King James version.
THE BIBLE (3307-3308) (2 disks) New Testament, King James version.
WORD WORKER (3309-3310) (2 disks) Bible search program. New Testament, King James version.
BIBLEMEN (3330) Excellent Bible quiz program.

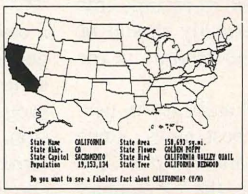
EDUCATION

AMY'S FIRST PRIMER (248) Child's learning game teaches letters, numbers, keyboard.



AMY'S FIRST PRIMER

FUNNELS AND BUCKETS (201) A fun way to learn math.
MATHPAK (202) Tutorial with lessons in higher math.
PC-TOUCH (204) Learn typing.
BASIC TUTORIAL (208) Learn programming with BASIC.
BEGINNING SPANISH (211) Tutorial.
SPANISH II (232) Sequel.
BIBLEQ (214) Learn the Bible with this Q-A tutorial.
FACTS 50 (239) Geography lessons for U.S. Nice graphics.



SPREADSHEET TEMPLATES

LOTUS MACROS (601) Save hours of work. (Req. Lotus)
LOTUS SPREADSHEET TEMPLATES (602) Ready-made. (Requires Lotus 1-2-3)
GOAL-SEEKER V3.5 (624) Achieve objectives by changing spreadsheet and seeing result. (Requires Lotus).
LOTUS TUTORIAL (630) Learn Lotus (requires Lotus).

APPLICATIONS

FORM LETTERS (1907) Commonly used form letters and business applications.
E-Z FORMS (1908) Make forms to meet different needs.
MANAGER'S PLANNER (1920) Daily planner. Prints out.
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FAMILY HISTORY (2203-2204) (2 disks) Create files and genealogical reports.
LOTTO PROPHET (2364) Best Lotto program we've seen.
CITY DESK (2513) Simple desktop publisher.

TELECOMMUNICATIONS

Q—MODEM 3.1 (1101, 1102, 1144) (3 disks) Powerful but easy to use. Fast.
RBBS V16.1A (1107-1109, 1150) (4 disks) Multi-user bulletin board system.
PROCOM 2.43 (1156) Outstanding modem software.

SECURITY/HACKING

COPY PROTECTION I (1219) Instructions for unprotecting commercial software.
COPY PROTECTION II (1220) More software unprotect.
COPY PROTECTION III (1221) More software to unprotect.
FLUSHOT (1225) Checks software for viruses.

DATABASE PROGRAMS

PC-FILE dB (853, 854, 855) (3 disks) Newest version! Rated better than dBase III+.
FILE EXPRESS 4.0 (803-804) Powerful system. Allows 32,000 records. Sorts to 10 fields.
DBASE III+ ROUTINES (851-852) (2 disks) Latest utilities to help you utilize dBase III+.

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CIRCLE READER SERVICE 48

Claris Corporation, the Apple Computer spin-off that also markets *MacWrite*, *MacPaint*, *MacProject*, and *MacDraw*. Claris support is very good; my questions were answered quickly and authoritatively. If the telephone support were toll free, the program would get a top rating for support.

Maintaining a sorted file is one oddity of *FileMaker II*. You can sort any file to your heart's content, carefully obtaining alphabetical order, but when you close the file and open it again later, you find the sorted order is gone. *FileMaker II* maintains the order of creation for each record in the file; and the only way to change it is to create a new, empty "cloned" file, sort the records in the old file, then import the sorted records into the new cloned file. There really should be an option to save the sorted records in the original file.

FileMaker II is powerful and easy to use. The latter is perhaps the best news, since many database programs are complex and difficult to master—even the elementary features. For example, setting up new layouts or report formats is quick and intuitive. Setting up the program to print mailing labels three across is also easy. *FileMaker II* should satisfy most businesses' needs for routine data management. —ROGER HART

PRD+

VERSION REVIEWED: 2.0

SYSTEM REQUIREMENTS: 256K IBM PC or PS/2; one drive; DOS 2.0 or higher; 5.25-inch and 3.5-inch

PUBLISHER: Productivity Software International, Inc., 1220 Broadway, New York, NY 10001; (212) 967-8666

PRICE: $90

OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

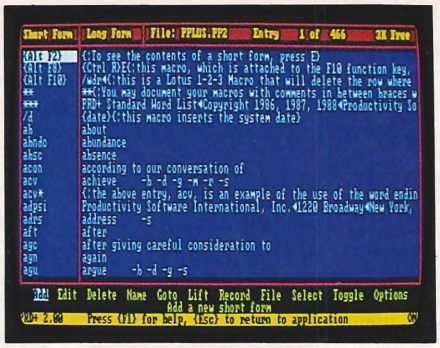
ERROR HANDLING: ★ ★

EASE OF USE: ★ ★ ★ ★

SUPPORT: ★ ★ ★ ★

The full name of *PRD+* is *Productivity Plus*, and it lives up to its name. The concept is fairly simple—you type a short abbreviation and the program automatically enters a longer character string that you've previously recorded and assigned to that abbreviation. In practice, this proves to be a major time-saver when used with a number of applications, including word processors, spreadsheets, database managers, and telecommunications programs.

Even if you are using software with the built-in ability to store and insert frequently used text or keystrokes, the *PRD+* system adds ease of use and flexibility. The program is memory resident, sitting in the background and monitoring your typing. When you type



PRD+ speeds computing by expanding abbreviations (such as its name, which stands for Productivity Plus*) into anything you can enter at the keyboard.*

a string of letters that you have previously defined as an abbreviation, followed by a delimiter (a space or a punctuation mark), the program automatically inserts the longer version of the phrase. The abbreviation is referred to as a Short Form, and logically enough, the expanded text is a Long Form—which can contain up to 4,000 characters, enough to handle a substantial block of text. These characters can include anything on the keyboard, including function keys and cursor-movement keys.

A simple example should make the concept clear. Let's say that at the end of every letter you type "Very truly yours" followed by five carriage returns and your name. You could enter *PRD+*'s Add mode, enter the abbreviation "vty" on the program's Short Form list, and define the Long Form as the complete letter closing. From now on, when you type "vty" and hit the space bar, your complete "Very truly yours" closing will be inserted instantly.

The most obvious use for *PRD+* is in word processing, but there are many other possibilities. You can use the program from the DOS prompt, issuing a series of commands with a few keystrokes. You can define printer-control commands, which often require tricky escape-code sequences, as a *PRD+* Long Form and replay them instantly. You can use *PRD+* instead of the keystroke macros in Lotus *1-2-3*, gaining the ability to use the same macros when working with a number of spreadsheets (*1-2-3* requires the macros to be part of the spreadsheet itself).

Several predefined sets of shortcuts are included with the program, including special-purpose libraries of Short and Long forms for legal and accounting documents, state and city abbreviations, macros for *1-2-3* and *dBase*, and setup strings for controlling a Hewlett-Packard LaserJet printer. It's easy to edit any of the provided lists to suit your own purposes or to start your own from scratch. You can grab sections of text you've already typed in a document and define a Short Form to automatically retype those characters in the future. You can even set the program to record your keystrokes, defining a Long Form as you type.

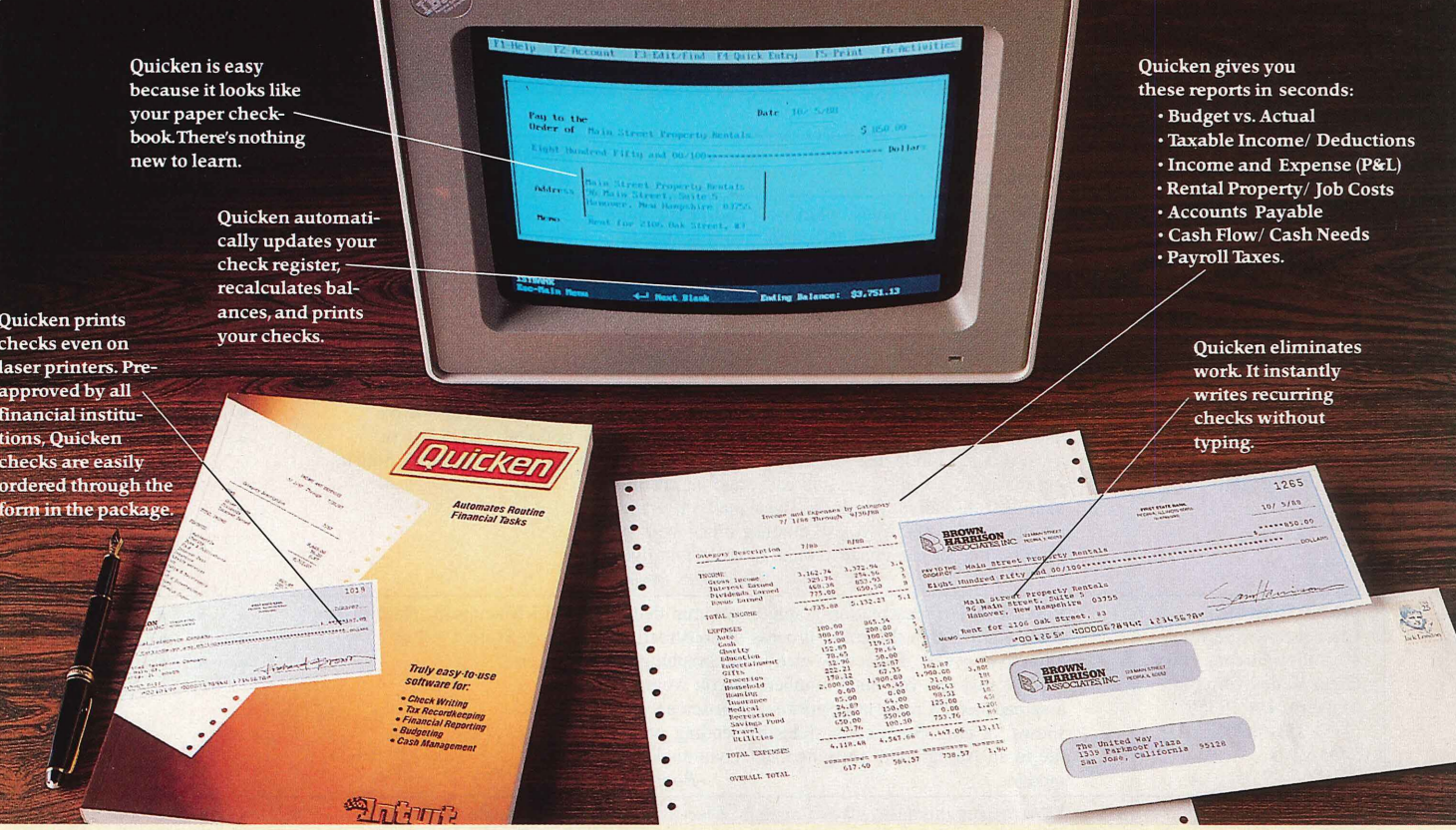
By entering special commands in your Long Forms, you can set breaks in the text insertion to wait for input from the keyboard. For instance, enter an entire letter as a *PRD+* Long Form with an "Accept" command embedded in it, and the program will pause and wait for you to enter the individual recipient's name and address before continuing.

The designers thought through all the angles when they were developing *PRD+*. A Short Form can be anywhere from one to eight characters long, so you can probably find an abbreviation that will be easy to remember. If you want to insert a string of characters you've defined as a Short Form and not have them expanded into a Long Form, you either toggle the program off for a single entry or call up the *PRD+* main menu and toggle it off altogether until you turn it back on again.

You must set the program to interact properly with the application program you are using, since it will have to delete the Short Form you enter and insert the replacement. *PRD+* comes with prepared formats for 21 popular programs plus eight standard formats that will work with many others; and there are instructions for customizing the program further if you still encounter problems. The only major incompatibility I found (and it was noted in the manual) is that the program will not work with any Microsoft *Windows* applications.

It is possible, however, to mess up your data royally on a floppy-disk system by saving *PRD+*'s information while running it in memory-resident mode. If you've swapped disks (say, to get to a different word-processing data file) and accidentally try to save a *PRD+* abbreviation file to that disk, you can overwrite your word-processing files. There's a clear warning in the manual about this, so it isn't really a program flaw; but there's no on-screen warning while running the program, which makes me a little nervous. There is no problem running *PRD+* from a hard disk.

There are many advantages to adding *PRD+* to your arsenal of utilities. Clearly you can cut down on the time it takes you to enter standard text. In the process you also eliminate misspellings and can change hard-to-remember command sequences into simple text strings. And even if your program already allows you to define strings of characters or commands that will be replayed automatically, the abbreviations you can create in *PRD+* are much more flexible and memorable, and using them quickly becomes second nature. —STEVE MORGENSTERN



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PC Magazine, December 27, 1988

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Address Book Plus Power Up Software Corp. 2929 Campus Dr. San Mateo, CA 94403 (415) 345-5900 $90-$100 vB.00	If you work with names, addresses, and phone numbers day in and day out, take a look at this speedy program that's perfectly adapted to that task. Also includes spaces for profession, company, birthday, and codes for sorting out suppliers, say, from customers. Prints address books, mailing labels, file cards, and more. *—Lisa Kleinholz*	256K IBM PC, PS/2 (640K optional). Printer with condensed characters (15-17 per inch). 5.25- or 3.5-inch.	★ ★ ★	★	★ ★	★ ★	★ ★ ★
Beyond Word Writer Timeworks, Inc. 444 Lake Cook Road Deerfield, IL 60015 (312) 948-9200 $200 v1.0	Several extras make this word processor stand out: A utility that proofreads documents for repeated words and irregular capitalization, punctuation, or spelling; a word-count mode that also creates an index indicating reading level of target audience; and an unconventional thesaurus that doesn't designate differences among word types. Can also emulate other word processors, but the commands could be more intuitive. *—Charles Bermant*	512K IBM PC, PS/2. Two drives (hard-disk drive optional). DOS 2.1 or higher. 5.25- and 3.5-inch.	★ ★ ★	★ ★	★ ★	★ ★	★ ★ ★
Cricket Presents Cricket Software Inc. 40 Valley Stream Pkwy. Great Valley Corporate Center Malvern, PA 19355 (215) 251-9890 $495 v1.0	Representative presentation-graphics program that leads you through the entire process of constructing attractive visuals. Especially nice is the graphing module that lets you enter numbers as you would in a spreadsheet. Create laser printouts, on-screen slide shows, or real 35mm color slides by sending your file to an Autographix Imaging Center via mail or modem. *—Roger Hart*	1MB Macintosh. Hard-disk drive. System 4.2 or higher.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
DeluxeWrite Electronic Arts 1820 Gateway Dr. San Mateo, CA 94404 (415) 571-7171 $80 v1.0	What makes this fast, easy-to-operate, Mac-like word processor such an exceptional value? All its higher-level functions: mail merge, a 90,000-word dictionary, and good use of graphics in documents. I also liked the informative dialog boxes that often appeared on-screen when I made an error. However, the mail-merge print feature was very exacting, and I've seen better printed output from *AppleWorks GS* (*see next month*). *—Deborah Kovacs*	768K Apple IIGS (1MB recommended). Two drives (hard-disk drive optional).	★ ★ ★	★ ★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
For the Record Nolo Press 950 Parker St. Berkeley, CA 94710 (415) 549-1976 $50 v1.0	Offers predesigned forms to organize important information about your life in one place. Lets you list financial, legal, and personal data in intimate detail—but lock the files so busybodies can't read them. Comprehensive and well structured, useful in an emergency. Still, it's slow to operate, and I wish it were a real database to sort through rather than just a series of forms. *—Gwen Solomon*	512Ke Macintosh.* One drive. System 6.0 or higher. Also for 256K IBM PC, PS/2. Two drives (hard-disk drive optional). DOS 3.0 or higher.	★ ★ ★	★ ★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
GEM Artline Digital Research Inc. P.O. Box DRI Monterey, CA 93942 (408) 649-3896 $495 v1.0	Drawing program that can create Bezier curves—the visual analog of twisting a wire by applying torsion to both ends—for desktop-publishing quality graphics. Not easy for novices, but they can trace over bit-mapped images (such as those produced by a scanner). Also useful for manipulating text as if it were a graphic; perfect for making a company logo, for instance. *—Lamont Wood*	640K IBM PC, PS/2. Hard-disk drive. Mouse. DOS 3.0 or higher. 5.25- or 3.5-inch	★ ★ ★	★ ★ ★	★ ★ ★	★ ★	★ ★ ★
QuickLetter Working Software, Inc. P.O. Box 1844 Santa Cruz, CA 95061 (408) 423-5696 $125 v1.0	A word-processing desk accessory (DA) specially designed for writing and printing memos, letters, stationery, and envelopes. Easy to operate in most facets, but it took much trial and error to paste a letterhead with graphics into a document. Includes an address book that can automatically insert a salutation, as well as a name and address, into a letter. Will help you make the most of your precious work time. *—Carol S. Holzberg*	512Ke Macintosh. 800K drive (hard-disk drive optional). System 5.0 or higher.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Turbo EMS Lantana Technology, Inc. 4393 Viewridge Ave., Suite A San Diego, CA 92123 (619) 565-6400 $100 v4.01	A utility that simulates expanded memory—that is, the extra memory normally added through the LIM (Lotus/Intel/Microsoft) 4.0 specification—by using either disk space or extended memory chips. Once installed for a particular application, Turbo EMS is easy to use, but installation requires some trial and error. The excellent free telephone support pulled me through. *—Brooks Hunt*	256K IBM PC, PS/2. Two drives (hard-disk drive optional). CGA, EGA, VGA, Hercules. DOS 2.1 or higher. 5.25- and 3.5-inch.	★ ★ ★	★ ★	★ ★	★ ★	★ ★ ★ ★

Ratings Key: O Overall Performance; **D** Documentation **EH** Error-Handling **EU** Ease of Use; **S** Support; ○ Poor; ★ Average; ★★ Good; ★★★ Very Good; ★★★★ Excellent

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Version	5.0	2.0	5.0	3.1
Manufacturer	Parsons Technology	Intuit, Inc.	MECA Ventures, Inc.	Monogram Software, Inc.
Suggested Retail Price	**$29.00**	**$49.95**	**$219.98**	**$179.95**
Account Balancer	YES	YES	YES	YES
- Automatic Error Finder	YES	NO	NO	NO
Accounts Can Be Added When Entering Transactions (Data)	YES	YES	YES	NO
Budgeting	YES	YES	YES	YES
- Variable Budgeting By Month	YES	NO	YES	YES
Automatic Transactions	YES	YES	YES	YES
Financial Reports				
- Actual Financial Results	YES	YES	YES	YES
- Month and Year to Date	YES	YES	YES	YES
- All Months On One Report	YES	YES	YES	YES
- Budgeted Financial Results	YES	YES	YES	YES
- Actual Compared to Budget	YES	YES	YES	YES
- Actual Compared to Prior Month	YES	NO	NO	NO
- General Ledger Report	YES	YES	NO	NO
- Accountant's Trial Balance	YES	NO	NO	NO
- Net Worth Computation	YES	NO	YES	YES
Inquiry Reports				
- Check and or Deposit Register	YES	YES	YES	YES
- Account Analysis	YES	YES	YES	YES
- All Transactions with Party	YES	YES	YES	YES
- Cash Requirements Forecast	YES	YES	YES	YES
- Aged Invoices Payable	YES	NO	YES	YES
Graphics	YES	NO	YES	YES
Fiscal Year Support	YES	NO	YES	YES
Optional Password Protection	YES	NO	NO	YES
Financial Calculator	YES	NO	YES	YES
- Prints Amortization Schedules	YES	NO	YES	YES
- Prints Accumulation Schedules	YES	NO	YES	YES
Mail List Manager	YES	NO	YES	YES
- Prints Address Labels	YES	NO	YES	YES
- Prints Index Cards	YES	NO	YES	NO
- Prints Telephone Directory	YES	NO	YES	NO
- Mail Merge with Word Processor	YES	NO	YES	YES
Check Writer	YES	YES	YES	YES
- Prints Laser Checks	YES	YES	YES	NO
- Prints Any Pin-Feed Check	YES	NO	YES	YES
Personal Income Tax Estimator	YES	NO	YES	YES
Pop-up Note Pad	YES	NO	YES	YES
Pop-up Math Calculator	YES	NO	YES	YES
Capacity				
- Total Number of Accounts Per File	999	300	*	120
- Total Number of Open Transactions	100,000	65,535	*	4,000

*Varies based on RAM memory and disk space available.

†Trademarks of their respective manufacturers.

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CIRCLE READER SERVICE 52

Dinosaurs Galore!

Thundering Beasts from the Distant Past Star in a Number of Educational Software Packages. Here's a Round-up of 10 of the Best Current Dino-Mania Programs.

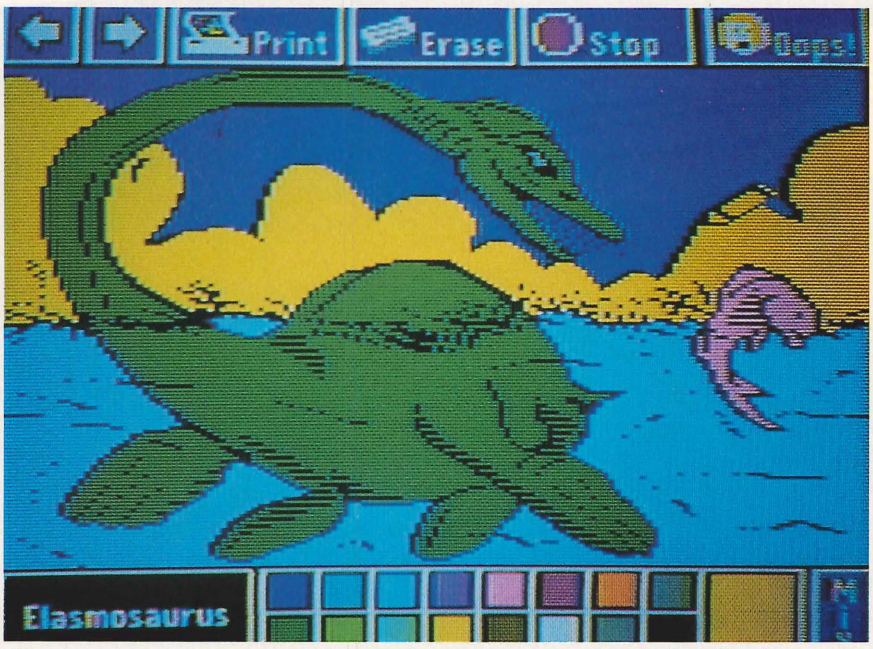
BY CAROL S. HOLZBERG

To a child, dinosaurs represent action and adventure—a tie to earth's shrouded past when building-size behemoths roamed the volcanic landscape. With the help of some popular cartoon characters, dinosaurs have come to represent a nonthreatening, even cute, alternative to television and film monsters. Every kid knows dinosaurs have been extinct for millions of years—and even if they were still around, there's no way 30-ton lizards could be lying in wait in your bedroom closet.

So now we have dinosaur lunch boxes, dinosaur erasers, and dinosaur book bags. Preschoolers memorize dozens of dinosaur facts and delight in distinguishing meat eaters from plant eaters. Five-year-olds run around the house screaming "diplodocus" and "pterodactyl" and recite, without any hesitation, the names of the prehistoric animals who walked on land, swam the seas, or flew through the sky.

Parents and teachers often use dinosaur images to show children that learning is fun. Studying the great reptiles stimulates interest in paleontology and science in general while promoting vocabulary, reading, writing, and research skills.

Now your children can access the world of dinosaurs with computers. There are many software packages available that take your children on a scientific journey back in time with sound, music, and colorful animated graphics. Here's a round-up of the very best.



The color palettes in Dinosaurs are Forever *allow youngsters to create dazzling dino-drawings.*

Dinosaurs

SYSTEM REQUIREMENTS: 64K Apple, C 64, 256K IBM PC

PUBLISHER: Advanced Ideas Inc., 2902 San Pablo Ave., Berkeley, CA 94702; (415) 526-9100

PRICE: $35–$40

PUBLISHER'S SUGGESTED AGES: 2–5

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★ ★ ★

This program is a favorite with the preschool crowd. *Dinosaurs* features five colorful games to acquaint young children with six prehistoric reptiles. Players match a dinosaur with its twin, classify an animal according to its food preference (plants or meat) or ecological niche (land, water, or sky), match and count the number of dinosaurs shown on the screen, and pair each animal with its name. Positive audio-visual reinforcement encourages kids to practice their sorting, counting, and reading skills.

This program not only teaches kids about dinosaurs, it teaches them about computers. As your youngster works through *Dinosaurs*, each game builds on and reinforces skills learned previously. Picture-oriented instructions allow even the youngest child to play right away, and the well-written manual includes six black-line pictures for coloring, a brief description of the animals featured in the program, and suggestions for off-line activities. *Dinosaurs* is a good program to pique a child's interest in prehistoric reptiles.

Dinosaurs Are Forever

SYSTEM REQUIREMENTS: 128K Apple, C 64, 256K IBM PC with CGA or EGA; printer recommended

PUBLISHER: Polarware, 1055 Paramount Pkwy., Suite A, Batavia, IL 60510; (312) 232-1984

PRICE: $30

PUBLISHER'S SUGGESTED AGES: 3 and up

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★ ★

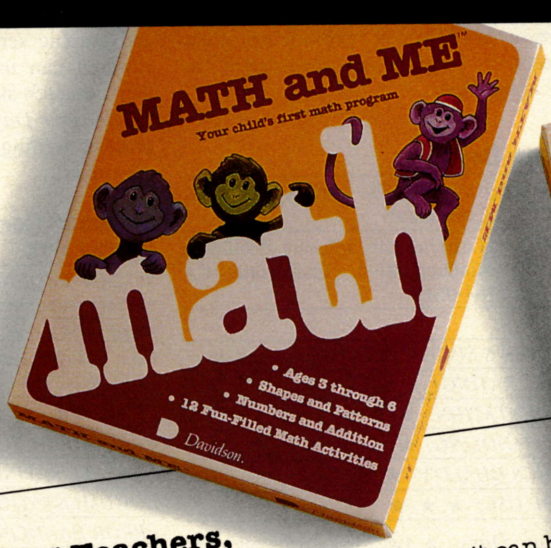
Welcome to the wonderful world of dinosaur desktop publishing. This program includes 26 (22 for the Commodore) dinosaur drawings for kids to electronically color. Creative flair rules the day when young artists brighten up the "terrible lizards" on-screen with lime green, pulsating purple, or pastel pink shading. Each printout includes the dinosaur's name.

Again, picture-oriented menus allow even nonreaders to function on their own. Kids select a dinosaur to color by "turning" the electronic pages in the coloring book. A 16-color palette, with each color available in 16 hues, gives kids the tools to go color-wild on the primitive beasts (16 color options are available on the Commodore).

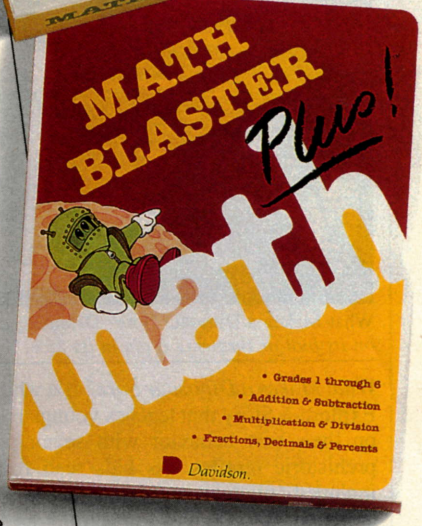
Kids select which area of the dinosaur to

CAROL S. HOLZBERG, *of Shutesbury, Massachusetts, is an anthropologist turned computer journalist. She writes for several Apple II and Macintosh publications and serves as a computer consultant to the Shutesbury Elementary School.*

Teach your children well.







Dear Parents and Teachers,

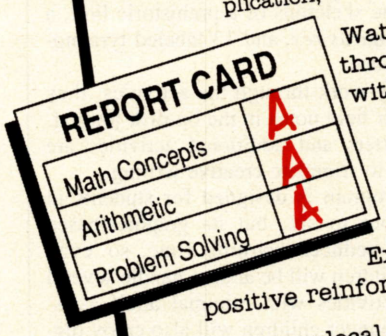
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color, position the crayon, and either click the mouse or press Return. When their pictures are complete, kids can print them either upright, sideways, or banner-size, with a description of the animal or a personalized message. Kids can also make a calendar from their pictures, customized for a specific month and year. (Sixty-four stickers are included to mark special days on the calendar.) With the variety of printing options, *Dinosaurs Are Forever* is a program that will grow with your child.

What Makes A Dinosaur Sore?

SYSTEM REQUIREMENTS: 128K Apple; color monitor and printer recommended

PUBLISHER: William K. Bradford Publishing Co., 594 Marrett Rd., Lexington, MA 02173; (617) 862-2570

PRICE: $44

PUBLISHER'S SUGGESTED AGES: 6–9

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★ ★



What Makes a Dinosaur Sore? *Dropping a rock on its foot or throwing a pie in its face.*

What Makes a Dinosaur Sore? is a whimsical Explore-a-Story that teaches youngsters to be on their best behavior with seven popular prehistoric reptiles. As kids read from the included picture storybook, they follow along on the computer and learn proper dinosaur manners along the way. For example: Do not throw a banana cream pie at a stegosaurus. And dropping a rock on a visiting tyrannosaurus' foot is a real *faux pas*. Younger children delight in the humorous tips.

The program offers several opportunities for second or third graders to practice their reading and writing skills. Children are encouraged to read the story on the screen and change it or create an entirely new one. They can add text by typing anywhere on screen or selecting labels to identify on-screen characters. Saving these edited files to disk allows kids to print and review their work.

Children can produce their own animated stories and draw from a variety of characters, props, and scenic backgrounds to piece together a dinosaur tale. Although *What Makes a Dinosaur Sore?* doesn't provide any scientific facts, its potential for open-ended creativity is limitless.

Dinosaur Days

SYSTEM REQUIREMENTS: 64K Apple, 128K IBM PC, 512K Macintosh

PUBLISHER: Learning Lab Software Publishing Inc., 21000 Nordhoff Blvd., Chatsworth, CA 91311; (818) 341-9611

PRICE: $40

PUBLISHER'S SUGGESTED AGES: 5 and up

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★

EASE OF USE: ★ ★ ★

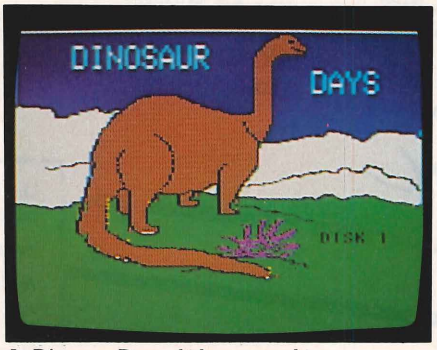
Dinosaur Days, a two-disk package, includes a series of educational activities. Kids design a prehistoric "dinosaur day" setting, complete with dinosaurs and scenery. They assemble a dinosaur from a variety of body parts and miscellaneous props.

Much of the clip art accurately depicts the flora and fauna of the dinosaur age, but some of the picture options are more whimsical: an animal juggling balls with its horns, robot dinosaurs, and so on. Dinosaurs can wear high-heeled shoes, beanies, cowboy hats, or football helmets. Kids can also add people and companion creatures to their scenes.

Finished products end up as realistic or silly as the child wants and can be printed out in a variety of type and image sizes.

In the second activity, children access the program's simple text processor to write about their "dinosaur day" in a "dinosaur diary." Again, final products can be saved and printed for review.

The third activity is exploring a prehistoric scene with a graphic-driven database. Kids move a pointer around the flora and fauna on-screen to select objects they would like to examine in greater detail. A fact screen pops up with the name of the subject, the period in which it lived, and a brief description. Text and graphic screens may be printed. Older children can use the database to improve their research skills.



In Dinosaur Days, *kids can combine scientifically accurate pictures with whimsical clip art to create some amusing results.*

Dinosaur Days entertains kids while they practice writing skills and learn facts about dinosaurs.

Dinosaur Construction Kit: Tyrannosaurus Rex

SYSTEM REQUIREMENTS: 128K Apple; color monitor recommended; printer optional

PUBLISHER: William K. Bradford Publishing Co., 594 Marrett Rd., Lexington, MA 02173; (617) 862-2570

PRICE: $44

PUBLISHER'S SUGGESTED AGES: 9–12

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★

This program is an excellent electronic tool for the scientific study of paleontology, fossils, and the most ferocious dinosaur of the Cretaceous period. Kids assume the role of paleontologist as they investigate the fossilized remains of a *Tyrannosaurus rex*. Colorful animated graphics strengthen this scientific presentation.

The disk includes several activities. In the first one, players must locate a buried fossil, uncover a series of bones, and sort some skeletal remains into specified categories. Next, they must assemble the skeleton, label the bones, and color the dinosaur.

If kids need assistance, there are files containing the skeletons of a prehistoric lion, a *Tyrannosaurus rex*, and 13 labeled tyrannosaurus bones.

As they work through the activities, they write their field notes in the on-disk journal. Story-starters and additional activities are provided to stimulate creative writing.

The program is designed for students in grades four to six, but its graphics-based interface reduces learning time, so even young children will be able to handle several of the activities with minimal adult assistance. Younger children will also enjoy digging up the bones, coloring the dinosaurs, and customizing the background and scenery.

The Dinosaur Construction Kit is an open-ended program that encourages reading, writing, and an appreciation of the scientific method. It offers many hours of creative computer fun.

Dyno-Quest

SYSTEM REQUIREMENTS: 48K Apple, 128K IBM PC with CGA

PUBLISHER: Mindplay, 100 Conifer Hill Dr.,

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BUSINESS

☐ **TICKLEX V4.2** (552) - Tickler/calendar/ office scheduler. Hard drive required..
☐ **EZ-FORMS Rev. D15** (66) - Menu-driven forms generator, misc. skeleton forms. 512 K.
☐ **FAST BUCKS V4.07** (864 & 865) - Menu-driven home finance package. 2 drives.
☐ **EXPRESSGRAPH V1.04** (457) - Business graphing program. CGA required.
☐ **IN CONTROL V2.702** (174 &175)- (2 disk set) The ultimate prospect / client customer & activity tracking system Hard drive req.
☐ **CATALIST V3.21** (163 & 164) - (2 disk set) The ultimate mailing list manager. Also handles Canadian, U.K., & European addresses. ***New.*** Hard drive required.
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☐ **PCLOAN4 V4.07** (799) - Does loan calculations & amortization schedules; almost any type of loan. Super!
☐ **MANAGING PEOPLE** (643) - Management course for supervisors.
☐ **PAINLESS ACCOUNTING VC2.50** (774-776) - (3 disk set) An integrated G/L, A/R, A/P menu-driven accounting package. 512K , hard drive required.
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☐ **PFROI V2.4c** (87) - Complete portifolio manager.
☐ **BILLPOWER PLUS V4.1** (794 & 795) - (2 disk set) State of the art time/billing/ bookkeeping program. 340K, hard drive required.

COMMUNITIONS

☐ **QMODEM V3.1A** (293 & 294) - (2 disk set) Full featured modem program. ***New.***
☐ **RBBS BULLETIN BOARD V17.1A** (613 - 616) - (4 disk set) Turn your computer into a RBBS. Industry standard. Hard drive req.
☐ **PROCOMM V2.42** (53 & 54) - (2 disk set) Menu-driven modem program; still one of the best.

DATABASE

☐ **INSTANT RECALL V1.64F** (515) - Memory resident free-form database.
☐ **FILE EXPRESS V4.28** (33 & 34) - (2 disk set) Menu-driven database; report generator, many features. One of the best database programs on the market! 2 drives ***New.***
☐ **WAMPUM V3.3S`** (37) - Menu-driven dBase III clone. Knowledge of dBase suggested. Hard drive required. ***New.***

EDUCATION

☐ **PC - FASTYPE V3.01** (120) - Improve your touch typing skills. CGA required.
☐ **PIANOMAN V4.00** (4 & 5) - (2 disk set) Turn your PC into a piano, create & edit music. (PC- DOS.)
☐ **THE WORLD V2.9 & WEADATA V2.0** (127) - Display maps of the world. CGA, EGA.
☐ **DOS TUTORIAL V4.4** (256) - Menu-driven tutorial that teaches DOS commands, etc
☐ **FUNNELS & BUCKETS V2.0** (130) - Learning game; add, subtract, etc. Ages 5 -10.
☐ **PLAY 'N LEARN V2.01** (624) - Contains 7 games designed for kids up to 6 years old. CGA required.
☐ **SPANISH TEACHER V1.2** (121) - Menu driven language tutorial. Basic required.
☐ **ALGEBRA TUTOR** (577) - Teaches various operations of algebra. CGA , DOS Ver. 3.xx.
☐ **BALLOON SPELLER** (809) - 3 different types of spelling games

GAMES

☐ **DIGITAL BASEBALL V1.1** (344) - Pick your team and players. Nice graphics .CGA req.
☐ **BLACKJACK GAMES V1.1** (95) - 3 advanced blackjack games, multiple players/ setup.
☐ **GAMES OF SKILL** (100) - Contains pool, bowling, & backgammon. CGA required.
☐ **MONOPOLY V6.7** (106) - Just like the board game, 2 to 4 players. CGA req.
☐ **SAILING IN THE BERMUDA TRIANGLE** (757) - Try and rescue the survivors and make it to port. CGA required.
☐ **SUPER PINBALL** (212) - 5 different games. CGA required.
☐ **SLUETH** (89) - A who - dun - it - mystery game similar to "Clue".
☐ **3-D CHESS V1.01** (215) - Excellent chess game. Switch between 2-D & 3-D.
☐ **EGA-TREK V1.0** (677) - Star-Trek with super graphics. EGA required.
☐ **CAPTAIN COMIC V3.0** (755) - Arcade style adventure game with super graphics. EGA required.
☐ **PC-PRO-GOLF V4.0** (667) - 18 hole golf course with nice graphics. CGA required.

GRAPHICS

☐ **VGA PAINT V1.1** (808) - A graphics drawing program, 248 colors at once! VGA & mouse required.
☐ **PC DRAFT II V3.20** (629)-A painting/ drafting program useful for producing clip-art for desktop publishing. CGA required.
☐ **PRINTMASTER GRAPHICS** (319, 549 & 550) - (3 disk set) Over 440 misc. graphics for Printmaster/Plus. Requires Printmaster or Plus. **For Printshop Graphics- Order disks # 320, 589, 590 respectively.**
☐ **PC-KEY-DRAW V3.53** (748-751) - (4 disk set) Combines features of a CAD & paint program for power/flexibility. Includes a full graphic database HYPERDRAW. CGA , hard drive required. ***New***
☐ **IMAGE 3-D V2.6** (676)-3-D wire frame modeling CAD. 512K, CGA, 2 drives req.
☐ **CHARTS UNLIMITED** (812) - Integrates graphics & text into one system; flowcharts, organizational charts, floorplans, electrical diagrams, Gaant charts, etc. 256k, CGA.

NOVELTY

☐ **MEAL MASTER V5.22S**(817) - Manage your recipes.
☐ **HUMOROUS DOS TRICKS** (236) - Various tricks to play on your friends. A must for any joker.. CGA required.
☐ **CROSSWORD CREATOR V3.30** (422) - Design, solve & print professional looking puzzles. 256k required.
☐ **PC LOTTO V2.2** (651) - Play almost any lotto in the world.
☐ **THE DIET DISK** (586) - How to lose those unwanted lbs.
☐ **FAMILY TIES V1.17** (154) - Complete geneology system.
☐ **HOME INSURANCE V3.01** (628) - Home inventory & record keeping system.
☐ **THE ONLINE BIBLE** (847 - 855) - (9 disk set) -The complete King James Bible with search & look-up capability. Hard drive req.
☐ **FOR FILMS & VIDEO TAPES V1.10** (621) - Catalog all your films & video tapes. 256K. 2 drives required.
☐ **THE NUTRITIONIST V3.0** (670) Food evaluation for nutritional content.

PRINTER UTILITIES

☐ **ON-SIDE V1.01** (560) - A sideways printing program with multiple fonts, up to 175.
☐ **LQ V2.32** (509) - Produces high quality text on dot matrix printers. Multiple fonts, print spooler.
☐ **LASERJET FONTS/1** (765 & 766)- (2 disk set) Fonts include: Century Schoolbook, Garamond, Optima, & Roman-Times. HP LJ+ or II.
☐ **LASERJET UTILS/3** (759) - Various utilities including one that allows true Epson emulation on your Laserjet! HP LJ+ or II.

SPREADSHEET

☐ **LOTUS LEARNING SYSTEM V2.4** (769 & 770) - (2 disk set) Explanations, illustrations, & practice sessions. Tutor Does NOT require Lotus. 512K, 2 drives required.
☐ **QUBECALC V3.02** (591) - A 3-D spreadsheet program, import Lotus files,.
☐ **AS EASY AS V3.01F** (302) - Lotus clone. 52 column sheet, graphing, supports functions of 123.

UTILITIES

☐ **ALT V1.16s** (581 & 582) - (2 disk set) Combines functions of Sidekick, Superkey, Norton, & Software Carousel.
☐ **GAME UTILITIES** (220) - Great for most programs that need color (CGA) to run.
☐ **DOS HELP** (255) - Help screens for DOS commands.
☐ **PC-DESKTEAM V2.01** (278) - Sidekick like utility plus more features.
☐ **AUTOMENU V4.50** (280)- Excellent menu program for your hard drive. Password protection & more.
☐ **FLU-SHOT PLUS V1.4** (541) - Various programs to protect against "trojan horses" & the "virus". A MUST FOR ALL !!!
☐ **LIST V6.2A** (274) - Best utility for viewing documentation. A MUST for all.
☐ **WINDOW BOSS V8.15.88** (782 & 783)- (2 disk set) Powerful programming techniques Hard drive required.
☐ **CATDISK V3.71** (237) - Inventory system for floppy disks.

WORD PROCESSING

☐ **GALAXY V2.42** (11) - Easy to use word processor; menus & quick commands.
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☐ **IDEA TREE** (947) - Personal information manager/thought processor; see thoughts & ideas in a tree structure. 256K, 2 drives.
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☐ **TASK MASTER V2.0** (950) - All purpose project tracking system.
☐ **GRAB PLUS V5.2** (951) - A memory - resident program that will grab names/ addresses from your word processor & send them to your printer; for envelope printing.
☐ **BUSINESS CONTACTS MANAGER V1.10** (960 & 961) - (2 disk set) Business contacts manager that tracks everything. Hard drive .
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PRICE: $50

PUBLISHER'S SUGGESTED AGES: 2–8

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★

Hop aboard a spaceship with Donnie and his dog on a quest for facts about a mystery dinosaur. Journey back in time to the age of dinosaurs and meet the giant reptiles face-to-face. When a dinosaur is fed correctly, it expresses its gratitude with a fact. Collect five facts, track down the mystery dinosaur, trade food for the remaining fact needed to complete a report, and win the game.

Confront hazardous storms, fires, and volcanoes that damage the spaceship and burn up valuable fuel. Feed a dinosaur incorrectly and you waste precious food. Run out of food and you won't have anything to trade for facts.

Dyno-Quest is an exciting simulation adventure that presents interesting information about 18 different dinosaurs. Sound, colorful animated graphics, and audio-visual reinforcement flesh out this enjoyable fact-filled game. Kids who already know something about dinosaurs will enjoy the program's many challenges, but the uninitiated may find it difficult to play. With Mindplay's challenge upgrade feature it's possible to tailor the program to the needs of a player. *Dyno-Quest*'s an oldie but still a goodie.

Dinosaur Dig

SYSTEM REQUIREMENTS: 48K Apple, 128K IBM PC with CGA

PUBLISHER: Mindscape, Inc., 3444 Dundee Rd., Northbrook, IL 60062; (312) 480-7667

PRICE: $50

PUBLISHER'S SUGGESTED AGES: 3–8

OVERALL RATING: ★ ★

DOCUMENTATION: ★ ★

ERROR HANDLING: ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★

Dinosaur Dig contains information on 32 dinosaurs. The two-disk package includes a vinyl keyboard overlay to simplify operation and a program manual.

The first disk presents a general survey of the age of dinosaurs and prepares the viewer for the games. High-resolution graphics and audio help kids learn about the geological changes that took place during the age of dinosaurs, the different types of dinosaurs, and the evolutionary relationships between them. There is also some discussion about why the dinosaurs became extinct.



The Dino Discovery section of Dinosaur Dig *gives details of 32 prehistoric creatures, including the dreaded tyrannosaurus.*

The second disk offers five activities. Kids can select "Dino Discovery" for in-depth looks at the life and times of 32 prehistoric reptiles. Each file contains facts about the animal's habitat, where its fossils have been found, the creature's measurements, whether it was a meat eater, plant eater or omnivore, and more. Dino Discovery serves as a good research activity, allowing children to study one type of dinosaur or to compare different species.

The four remaining activities are more like games. In "Dino Dig," players guess the identity of a mystery dinosaur using as few clues as possible. "Dino Flash" resembles electronic flashcards—kids see a picture of a dinosaur and must identify it in as few tries as possible. In "Fact or Fable," players determine whether or not the two dinosaurs pictured together on-screen actually lived at the same time. In the final activity—"Who's Biggest?"—players see three dinosaurs and select the one that weighed the most.

Designasaurus

SYSTEM REQUIREMENTS: 512K Amiga, 128K Apple, 768K Apple IIGS, C 64, 512K IBM PC with CGA; two disk drives; color monitor; printer recommended

PUBLISHER: Britannica Software, 345 Fourth St., San Francisco, CA 94107; (415) 546-1866

PRICE: $40–$50

PUBLISHER'S SUGGESTED AGES: 5 and up

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★

EASE OF USE: ★ ★ ★

Supplement a classroom science lesson on dinosaurs with these three electronic activities from Britannica Software. "Print-A-Dinosaur" is simple enough for preschoolers. Kids can print small or poster-size line drawings (suitable for coloring) of 12 famous prehistoric reptiles. Most pictures show the dinosaur's name in bold block letters. Regular-size printouts include a one-page picture, plus a one-page description. A print-in-reverse feature produces hard copies on T-shirt transfers, which come with the package.

In "Build-A-Dinosaur," children visit the Museum of Natural History to reconstruct a realistic dinosaur skeleton or mix and match bones from different species. Players select fossils from a file cabinet containing head, body, and tail bones. The program provides information on each body part so the child can determine if the parts of their creation are incompatible—for example, is a carnivore's head on an herbivore's body? Dinosaurs may be printed in two sizes or on the T-shirt transfer sheets.

"Walk-A-Dinosaur," the third activity, is a simulation adventure. Children assume the role of a brontosaurus, stegosaurus, or tyrannosaurus and try to survive a walk through four (Apple II) or five (Apple IIGS and IBM) different ecosystems. Dinosaurs consume calories, so they must stop to eat. But if they tarry, they'll upset nature's delicate balance. Players who successfully maneuver their giant reptile through each habitat, without becoming food for a hungry tyrannosaurus, earn a printed certificate of completion.

Aside from the program's factual inaccuracies—the ecosystems don't realistically represent the earth of 70 million years ago—*Designasaurus* is both educational and fun. A variety of activities stimulate scientific curiosity in children of all ages. The IIGS version, which requires almost one megabyte of RAM, offers terrific graphics and impressive sound effects.

First Dinosaur Reader

SYSTEM REQUIREMENTS: 64K Apple, C 64

PUBLISHER: Orange Cherry Software, P.O. Box 390, Pound Ridge, NY 10576; (914) 764-4104

PRICE: $78

PUBLISHER'S SUGGESTED AGES: 5–8

OVERALL RATING: ★ ★ ★

DOCUMENTATION: ★ ★

ERROR HANDLING: ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★ ★

Beginning readers will enjoy four humorous stories that feature dinosaur protagonists. Children follow the colorful, animated adventures of Curious Clyde, a nanosaurus, as he tries to figure out what's inside a strange yellow stone. He joins Homer, a very big but terribly shy apatosaurus, when he comes to the rescue of another dinosaur.

The story appears on-screen in large, easy-to-read print, accompanied by audio and colorful, animated graphics. As children read, they answer simple questions and press keys to continue. The activities are successful because they motivate youngsters to read. The stories reinforce keyboarding skills and fur-

nish interesting facts about many dinosaurs and their habitats. At $78, *First Dinosaur Reader* is pricey, but for a solid reading adventure, it's a winner.

Return of the Dinosaurs

SYSTEM REQUIREMENTS: 128K Apple; 256K IBM PC with CGA, EGA, or Hercules; color monitor and printer optional

PUBLISHER: American Educational Computer, Inc., 7506 N. Broadway Extension, Suite 505, Oklahoma City, OK 73116; (405) 840-6031

PRICE: $40 (Full color poster available for $2)

PUBLISHER'S SUGGESTED AGES: 10 and up

OVERALL RATING: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★

ERROR HANDLING: ★ ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★ ★ ★

Return of the Dinosaurs is a fun-filled adventure that not only teaches children interesting facts about 70 prehistoric reptiles, but also encourages them to practice word-processing and database-management skills. The game begins when players discover that Professor T. Rex's time transporter has malfunctioned. The machine has created a crack in time, allowing dinosaurs to wander into the twentieth century from the Mesozoic era. Children must determine which animal is lost and return it to its rightful geographic place and time period. Tracking down the reptiles becomes harder with each new animal and every successive level.

Players roam through four locations (Main Street, a rural scene, the local museum, and Museum Park) to gather clues about the missing dinosaur. Time is of the essence, since there is a limited number of "days" to solve the mystery. Traveling from one location to another in search of clues takes time and costs money. In addition, players must eat regularly to maintain proper nourishment.

To earn extra cash for food, travel, and clues, children can run errands or work part-time on the Dinosaur Column at the local newspaper. (They earn $10 for every question answered correctly at the News Office.) The program's on-line database, DinoFile, provides all the information they'll need to find the answers.



Dinosaurs are lost in the 20th century in Return of the Dinosaurs. *Youngsters must identify the creatures and return them to their rightful place and time.*

As players collect clues, they enter the details in an electronic Note Taker and access the DinoFile for more facts. The database organizes information in 13 files, including dinosaur name (common and zoological), period in which the reptile lived (Triassic, Jurassic, or Cretaceous), geographic location, size, weight, body measurements, diet, and style of locomotion (walking, flying). The questions encourage sorting facts according to definite search criteria in order to narrow down the possibilities.

Return of the Dinosaurs is an entertaining, problem-solving mystery that promotes successful database management. Colorful graphics and occasional audio reinforcements offer encouragement.

PREHISTORY COMES ALIVE

As you can see, there's an incredible variety of "dinoware" for dinophiles young and old. Some programs emphasize creativity and artistic expression while others provide insight into how the dinosaurs lived, focusing on the demographics that distinguish one animal from another. All succeed as electronic supplements to library research and classroom projects, making natural history come alive in exciting ways. ■

DINO DOO-DADS

Dinosaurs have been extinct for 65 million years, but look around and you will see enough dinosaur memorabilia to make a paleontologist's head spin. A wealth of dinosaur books, toys, models, clothing, posters, puzzles, tableware, and even vitamin pills fill store shelves. If you're in search of the perfect birthday gift or conversation piece to brighten up your office or coffee table, you may find it in one of these catalogs:

Dinosaur Catalog
P.O. Box 546
Tallman, NY 10982
(914) 634-7579
Price: $2

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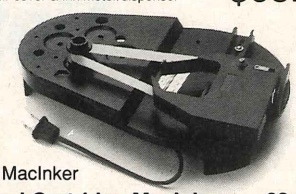
These catalogs should satisfy the needs of the most ardent dinosaur-goodie collector. Check out the replicas, dictionaries, cassettes, posters, stickers, and mobiles. You'll find dominoes, puzzles, magnets, videos, cookie cutters, and night-lights. Be the first on your block to own a hand-held tyrannosaurus sprinkler shower spray, a triceratops toothbrush, or a brontosaurus coffee mug!

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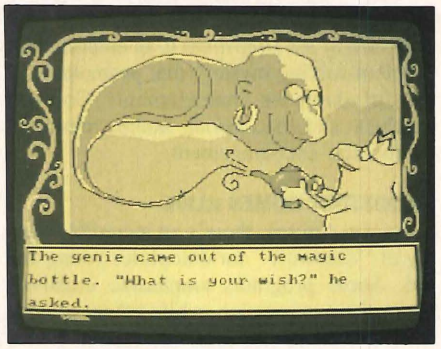
Software for Learning and Leisure

Comprehensive and Capsule Reviews of New and Noteworthy Programs for Education, Family Productivity, and Entertainment

The following ratings key and table refer to full as well as capsule software reviews. Listed are many types of computers, as designated under "System Requirements," and the models included under each designation. When a review lists additional hardware, software, or memory, it is required unless noted as "recommended" or "optional." When a review lists more than one computer, the machine marked with an asterisk (*) is the one on which the software was reviewed. Requirements are *not* listed where obvious (for instance, printers with graphics programs). Operating system requirements, such as MS-DOS or the Macintosh System file, are listed only when they're not the standard, minimum requirement (DOS 2.0 for IBM PC or compatibles, System 3.2 for the Macintosh, or ProDOS for the Apple II). For those computer systems that can use both 5.25- and 3.5-inch disks (IBM PC and PS/2 or the Apple II), we've listed only those disk sizes that are either supplied with the software or available at no extra cost from the publisher.

Ratings Key: ○ Poor; ★ Average; ★★ Good; ★★★ Very good; ★★★★ Excellent.

Designation	Models
512K Amiga	500, 1000, 2000
48K Apple	II/II Plus/IIe/IIc/IIGs (in IIe/c mode)
64K Apple	II Plus/IIe/IIc/IIGs (in IIe/c mode)
128K Apple	IIe/IIc/IIGs (in IIe/c mode)
128Ke Apple	IIe (enhanced ROM)/IIc/IIGs (in IIe/c mode)
Apple IIGs	IIGs only
48K Atari	800/600XL/800XL/65XE/130XE
512K Atari ST	520ST/1040ST/Mega ST
C 64	C 64, C 128 (in C 64 mode)
IBM PC	PC/XT/AT, PS/2 and compatibles
128K Macintosh	128K/512K/512Ke/Plus/SE/II
512K Macintosh	512K/512Ke/Plus/SE/II
512Ke Macintosh	512Ke/Plus/SE/II
1MB Macintosh	Plus/SE/II



The Genie will grant you three wishes to help combat the evil doings of Flodd, the Bad Guy.

EDUCATION

Flodd The Bad Guy—The Reading Magic Library

SYSTEM REQUIREMENTS: 64K Apple*, 128K IBM PC w/CGA, EGA or Hercules; 5.25- or 3.5-inch disks; color monitor recommended.

PUBLISHER: Tom Snyder Productions, Inc., 90 Sherman St., Cambridge, MA 02140; (617) 876-4433 or (800) 342-0236

PRICE: $35

PUBLISHER'S SUGGESTED AGES: 2–6

COPY PROTECTED: Yes

OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

ERROR-HANDLING: ★ ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★ ★

EASE OF USE: ★ ★ ★ ★

Our 4-year-old daughter, Erin, never gets very excited about reading and following the instructions printed on a computer screen. She prefers listening to my wife or me read from a book while she gazes at the pictures. *Flodd, The Bad Guy* has changed some of that. *Flodd* is part of a series that publisher Tom Snyder calls Lapware because it's designed for parents and kids to use together. As this animated, interactive story unfolded on the computer screen, "You do it, Daddy" became "Let *me* do it!" Erin discovered that *she* can influence the outcome of a story—*she* can "tell the computer what to do."

During the story, choices must be made between two options, such as whether to go up or down. The program decides who makes the decisions—your child alone, or you and your child together. Each choice gave Erin the opportunity to practice locating letters on the keyboard and pressing them. As her confidence grew, her response time decreased, and she became more focused on the plot.

The *Flodd* screen display is ornate, similar to a movie-theater. Cartoon sequences are in bright, high-resolution colors, and the easy-to-read text is at the bottom of the screen. When the program boots up, your child types in his or her name. Later, the name is woven into the story—this prompted Erin to ask me how the computer knew who she was.

Flodd is a pretty mean character in a story involving a genie, a magic lamp, and a king who just wants people to be happy. Erin could follow the story pretty easily. She was slightly afraid of Flodd and clearly didn't approve of some of his actions, but was happy that he didn't perish in the end.

Reading *Flodd* took us about 10 minutes, the same amount of time it takes to read a typical children's book. But we read it again a few times—just for fun—and a few more times—just for more fun.

Until we used this program, I hadn't realized how much fun it can be to spend time playing, laughing, and reading together at the computer. Reading *Flodd* with Erin on my lap showed me that she has a keen interest in the computer, with the right program. She's getting bored watching me use *WordPerfect* and *PC Paintbrush*, but she can't wait until we get the Reading Magic Library version of Jack and the Beanstalk. She wants to know, "How are they going to fit that giant in the computer, Daddy?"

—JOEY LATIMER

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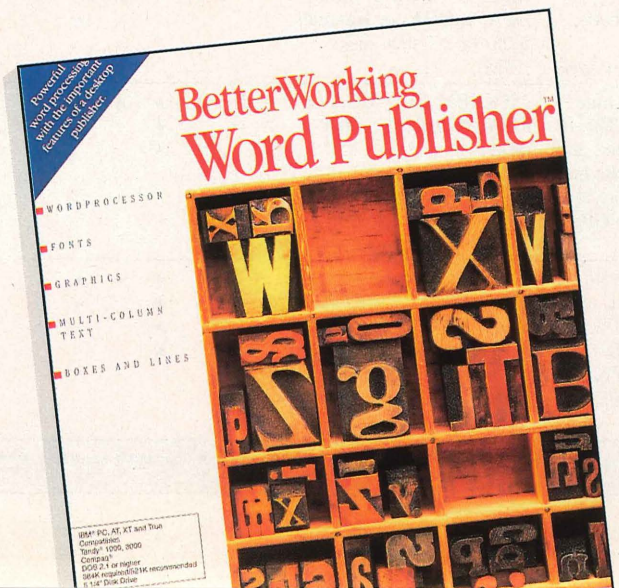
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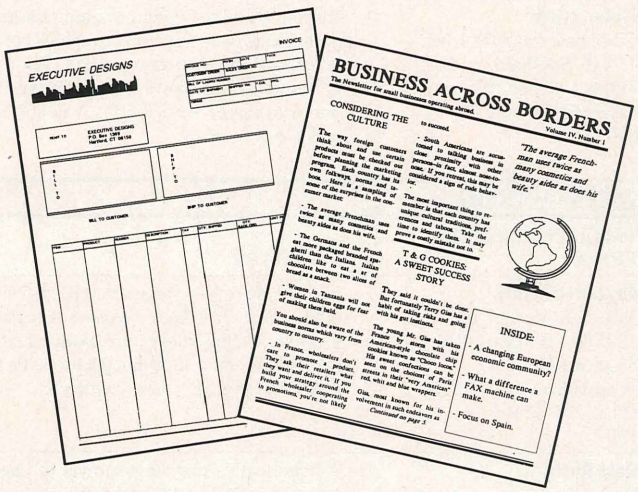
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CIRCLE READER SERVICE 58

CAPSULE REVIEWS

EDUCATION/FAMILY PRODUCTIVITY

TITLE/PUBLISHER PRICE	SUMMARY	SYSTEM REQUIREMENTS	CP	RATINGS O	D	EH	GQ	EU
PC Globe+ Comwell Systems, Inc. 2100 S. Rural Rd. Suite #2 Tempe, AZ 85282 (602) 894-6866 $70	Do you know where Sri Lanka is? Or what language they speak in Nigeria? These and other geography facts, such as economics, population, and tourism for 177 countries, are easy to access with pull-down menus. Customize the colorful maps and charts to display global regions for use in business, education, or travel. Ages 8 to adult. —*Steve Williams*	384K IBM PC; two drives (hard-disk drive recommended); CGA, EGA, VGA, or Hercules; 5.25- or 3.5-inch disks.	N	★ ★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Punctuation Rules Weekly Reader Software/ Optimum Resource, Inc. 10 Station Pl. Norfolk, CT 06058 (203) 542-5553 $50	This multiple-choice drill-and-practice program teaches punctuation rules to kids ages 8 to 11. Options include four difficulty levels, sound control, printed progress reports, and the ability to customize the exercises. On the dull side, but adding your own creative sentences can help. —*Miriam Furst*	48K Apple; 5.25- or 3.5-inch disks; color monitor and printer recommended.	Y	★ ★	★ ★	★ ★	N/A	★ ★ ★
Junior Typer Computer Easy Int'l Inc. 414 E. Southern Tempe, AZ 85282 (602) 829-9614 $10	An introductory typing program that kids age 6 to 9 go bonkers over. Exciting graphics correspond to the letters and numbers being typed. For example, the JU combination shows a juggling unicorn, and a frog jumps to the FJ key combo. A quality package for an unbelievable price. —*Miriam Furst*	64K Apple; color monitor recommended. 5.25-inch disk.	N	★ ★ ★ ★	★ ★	★ ★ ★	★ ★ ★	★ ★ ★ ★

ENTERTAINMENT

TITLE/PUBLISHER PRICE	SUMMARY	SYSTEM REQUIREMENTS	CP	RATINGS O	D	PS	GQ	EU
Airplane Factory Design Software, Inc. 1275 W. Roosevelt Rd. Suite #104 West Chicago, IL 60185 (312) 231-4540 $30	Modify any of 14 stock aircraft or design your own planes to fly in *Chuck Yeager's Advanced Flight Trainer*. Unique planes are easily created with a few keystrokes and a little imagination. Perfect for test pilots looking for a new challenge. —*Steve Williams*	256K IBM PC w/CGA, VGA, EGA, or Hercules; *Chuck Yeager's Advanced Flight Trainer*; 5.25- or 3.5-inch disks.	N	★ ★ ★	★ ★ ★	★ ★	★ ★	★ ★
Gold Rush! Sierra On-Line P.O. Box 485 Coarsegold, CA 93614 (209) 683-4468 $40	A historically accurate portrayal of one man's quest for gold in 1848. As Jerrod Wilson, you quit the 9-to-5 grind of Brooklyn and head west to find fortune and your long-lost brother Jake. Choose from three routes—across the continent, through Panama, or around Cape Horn. Each direction leads to a challenging adventure. —*Rob Gilpin*	256K Amiga, 512K Apple IIGS, 512K Atari ST, 256K IBM PC* w/CGA, EGA, VGA, MCGA, or Hercules; 512K Macintosh; 5.25- and 3.5-inch disks (IBM); joystick optional.	N	★ ★ ★ ★	★ ★ ★ ★	★ ★ ★ ★	★ ★ ★	★ ★ ★ ★
Police Quest II: The Vengeance Sierra On-Line P.O. Box 485 Coarsegold, CA 93614 (209) 683-4468 $50	The Death Angel is back on the streets and out to get you. Track him down and put him behind bars or else. . . . The graphics are better than in the original adventure, and there are some new, useful features, but the plot is not nearly as compelling. —*Steve Williams*	512K Amiga, 512K Apple IIGS, 512K Atari ST, 512K IBM PC* w/CGA, VGA, EGA, MCGA, or Hercules; 5.25- or 3.5-inch disks (IBM).	N	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Scavengers of the Mutant World Interstel Corp. P.O. Box 57825 Webster, TX 77598 (713) 486-4163 $50	You control the search for parts to build a machine to transport you off the radiation-filled world. The 40 pages of instruction, 20 potential party members, and innumerable mutant humans, animals, and plants bog down the game. Few will feel compelled to play to the bitter end. —*Rob Gilpin*	256K IBM PC w/CGA or EGA; 5.25- or 3.5-inch disks.	N	★	★ ★ ★	★	★	★ ★
Serve & Volley Accolade, Inc. 550 S. Winchester Blvd. #200 San Jose, CA 95128 (408) 985-1700 $30–$40	A solid, easy-to-use tennis program for the novice or pro. Good eye-hand coordination is needed, but proper swing selection (forehand, backhand, slice, lob, or smash) is more important. One of the few tennis programs on the market that combines strategy with arcade action. —*Adam Sherwin*	C 64, 512K Apple IIGS, 256K IBM PC* w/CGA, VGA, EGA, or Hercules; joystick recommended; 5.25- or 3.5-inch disks (IBM).	Y	★ ★	★ ★ ★ ★	★	★ ★ ★	★ ★ ★

Ratings Key: CP Copy Protected, yes or no; **O** Overall Performance; **D** Documentation; **EH** Error-Handling; **PS** Play System; **GQ** Graphics Quality; **EU** Ease of Use; ○ Poor; ★ Average; ★★ Good; ★★★ Very Good; ★★★★ *Computer Used for Review.

ENTERTAINMENT

Wizardry V: The Heart of the Maelstrom

SYSTEM REQUIREMENTS: 64K Apple*, 128K IBM PC; CGA; 5.25- or 3.5-inch disks (IBM)

PUBLISHER: Sir-Tech Software, Box 245, Ogdensburg, NY 13669; (315) 393-6633

PRICE: $50

COPY PROTECTED: No

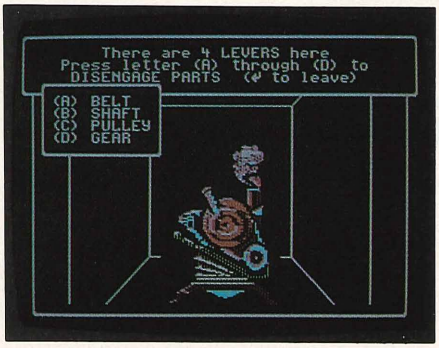
OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

PLAY SYSTEM: ★ ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★ ★ ★



Wizardry V: The Heart of the Maelstrom *is the best episode of the series yet.*

Until now, none of the *Wizardry* scenarios matched the excitement of *Wizardry I*. The changes made in the fifth scenario are all marked improvements in the spirit of the ground-breaking original. The only exception is the plot—once again, Llylgamyn is in peril and needs a hardy band of adventurers, and the cause of all the trouble is a very powerful mage. You'd think Sir-Tech could come up with something new.

Plot aside, *Wizardry V* is the best of the series. The bugs have been corrected, and convenient features, such as the ability to save the game while in the dungeon, have been added. Unlike *Wizardry IV*, no previous experience with the series is necessary.

You command an intrepid band of up to six adventurers. Take a closer look at the individual members, and the many changes will become apparent. The priests and mages have some new spells, including Summon Monster and Pick Lock. Thieves now have the option to hide, ambush the enemy, or fire a bow, while the rest of your party is attacking. In fact, your fighters can wield long-reaching weapons, such as halberds and huge hammers, to wreak havoc in the back ranks of your foes.

All this extra firepower is useful when engaging hostile creatures, but there will be times when a more subtle approach is required. On such occasions, you'll be able to talk to, barter with, and steal from the dungeon dwellers. Additionally, there are many problems that neither killing nor diplomacy will solve. There are the usual riddles, mysterious wall engravings, and dark areas, but now you have to search for hidden objects and secret doors, decipher clues, and swim to the bottom of deep pools.

I've saved the best news for last. Every dungeon level has two-and-a-half times the surface area of those in previous scenarios. The graph paper I was using to map wasn't big enough to fit even one level. The *Heart of the Maelstrom* is a bigger, better *Wizardry* than ever before.

—DAVID LANGENDOEN

Quarterstaff: The Tomb of Setmoth

SYSTEM REQUIREMENTS: 1MB Mac

PUBLISHER: Infocom, 125 CambridgePark Dr., Cambridge, MA 02140; (617) 492-6000

PRICE: $50

COPY PROTECTED: No

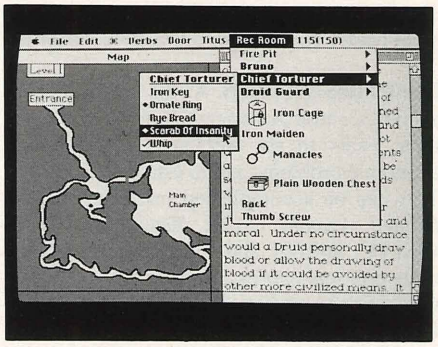
OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★

PLAY SYSTEM: ★ ★ ★ ★

GRAPHICS QUALITY: ★ ★ ★

EASE OF USE: ★ ★ ★ ★



To form a strong defense in Quarterstaff, *it's wise to know what weapons your opponents carry.*

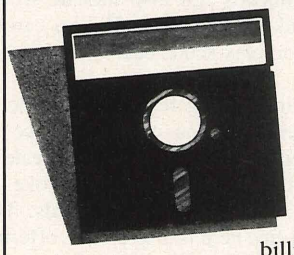
Quarterstaff stands out from the rest of Infocom's excellent games. It has the depth and variety of puzzles that we've come to expect from Infocom, but is also highly realistic and easy to use.

The story-line of *Quarterstaff* is nothing special: The Tree Druids, who have helped maintain peace over five kingdoms, disappeared three months ago. It is your mission as a man-at-arms to explore the deserted Tree Druid colony for clues to their whereabouts. But this is where conventionality ends.

Tired of getting stuck in adventures searching for synonyms that the program will understand? *Quarterstaff* solves this by providing menus of 51 verbs, 11 prepositions, visible exits, and all visible objects. These

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lists not only circumvent the frustration of not being able to express yourself, but save you time since the words can be entered with a simple point-and-click of the mouse.

Your commands can also include words not suggested by the menus. Entries can be one word, complex sentences, or a group of sentences.

Another time-saving feature is the inclusion of macros. If you use a sentence or group of sentences often, simply create a macro and then use a single keystroke or click of the mouse to enter the words. The extensive on-line help is also useful, offering general information and specific hints.

Quarterstaff is the most realistic computer role-playing adventure I've ever played. Not only do you have to eat and drink on a regular basis, but when you sleep (required each day), there is a time-delay, simulating the passage of 50 rounds. The limited light resources, which extinguish after a predetermined number of rounds, also add to the realism, as do the digitized sounds of creaky doors opening and screams of death.

The auto-mapping feature is an improvement over previous Infocom games. Instead of squares representing the terrain, detailed maps of your surroundings are drawn as you progress into the Tree Druid colony. The only other graphics represent primary characters and objects that appear infrequently.

Throughout the course of the game, you meet many interesting characters, and you have to cooperate with some of them to successfully complete the game. The most advanced feature of the game allows you to split your party into several units and venture into different areas of the colony simultaneously. Another lets you shoot objects from room to room.

Quarterstaff was originally released in 1987 by Simulated Environment Systems (SES) but did not receive widespread distribution. Infocom purchased the rights to the game and cleaned up the program before releasing it under its own banner. Many improvements were made, including word menus, on-line help, and a revised story line.

A fatal bug in version 2.0C causes the game to crash when object-carrying adventurers enter one of two locations. The bug is fixed in the latest version, 2.0E, so be sure to inquire about the version before purchasing. And purchase the program you should, since even with the bug, *Quarterstaff* is an exciting adventure. —JIM PHELAN

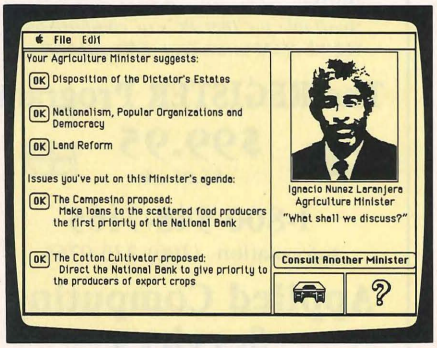
Entertainment News and Hints

The Latest Scoop on Games

BY JIM PHELAN



GAMES OF THE FUTURE. Maxis Software's *RoboSport* (1MB Macintosh; $50) puts machines, not humans, on the playing field to amuse the masses. You program four robots to compete in the arena against other teams, and then sit back and let the fun begin. *RoboSport* is scheduled for an August release. In sharp contrast is Epyx's—*Skate Wars* (512K Amiga, 512K Atari ST, C 64, 256K IBM PC; $20–$50)—a hard-hitting cross between soccer and ice hockey. This is the first installment in the company's Future Games series. It is similar to the sport featured in the film *Rollerball*, in which athletes risk their lives for large sums of money. It'll be a long time before we see sports like this on ESPN.



Each character has a Hidden Agenda *in Springboard's new political simulation.*

DANGEROUS MISSIONS. As the new leader of a small Central American country, you have three years to rid the land of social and economic problems and to establish stability. This can be accomplished in Springboard's *Hidden Agenda* (512K Macintosh, 512K IBM PC; $60) by appointing ministers from three political parties, meeting foreign diplomats and journalists, and making land reforms. If this sounds tough, how about attempting a hostage rescue with only six soldiers? Mindscape's *Hostage* (512K Amiga, 512K Apple IIGS, 512K Atari ST, C 64, 512K Macintosh, 512K IBM PC; $30–$45), a game of international terrorism, gives you a limited time to rescue government employees held captive in their embassy.

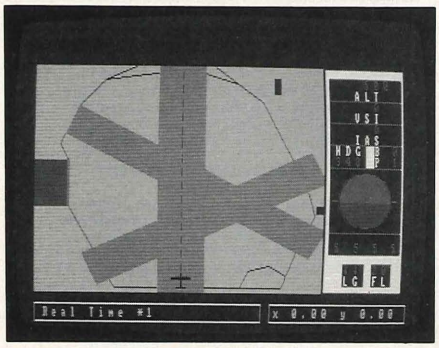
TAITO CASHES IN. *Qix*, the classic arcade game, is back after an eight-year absence—this time for your personal computer. Taito has finally translated this strategy game, in which you avoid sparks and waves of energy, for the 512K Amiga, 128K Apple, 512K Apple IIGS, 512K Atari ST, C 64, and 512K IBM PC ($35–$40). Taito also translated a more recent arcade hit, *Rastan* (512K Amiga, 512K Atari ST, C 64, 512K IBM PC; $35–$40). Armed with a sword and magical weapons, you must take over six castles, each ruled by a Lord of Destruction. Don't look now, yet another variation on Taito's Arkanoid game is on its way. Titus Software's *Xerion* (512K Macintosh; $40) has 36 levels of brick-breaking action. However, you do not play for points; success can only be measured by the number of levels you've completed. Taito made the arcade version of *Arkanoid*, but does not receive royalties for *Xerion* because it licensed *Arkanoid* to Discovery Software before deciding to enter the personal-computer market.

SPORTING GOODS. Compete in six events from the land down under in Mindscape's *Aussie Games* (C 64, 256K IBM PC; $30–$40). The dry-river boat race and boomerang toss are the only two sports that might be considered indigenous to Australia. The origins of beach football, the belly flop, marlin fishing, and the beer-bottle shoot are questionable. *Pure Stat Baseball II* (C 64, 256K IBM PC; $40) has improved graphics and better two-player capabilities than the original, according to publisher Software Simulations. If you're not content just watching professional wrestling on television, two new programs will let you into the action. As a wrestling promoter in Capstone's *Mat Mogul* (512K Amiga, 128K Apple, 512K Atari ST, C 64, 256K IBM PC; $40), you can make big bucks if you put together successful teams. You can become even more involved in Mindscape's *Sgt. Slaughter's Mat Wars* (C 64, 256K IBM PC; $30–$35), in which

you manage a wrestler and perform in the ring. You'll get to know pile drivers and airplane spins firsthand. This is the first program endorsed by The Sarge, the current World Wrestling Federation spokesperson.

REAL-TIME ADVENTURES. *Ultima I* was the first real-time adventure to achieve widespread popularity. Since its release in 1981, the emphasis of the genre has evolved from adventure to arcade. Two of Epyx's latest releases are good examples: In *Devon Aire in the Hidden Adventure* (512K Amiga, 256K Apple, 512K Atari ST, C 64, 512K IBM PC; $40–$50), you search through a mansion for diamond jewelry, while in *Trials of Honor* (512K Amiga, 512K Atari ST, C 64, 512K IBM PC; $24–$30), you must complete six tests of brain and brawn to avenge your father's death and save the kingdom. Quick decision-making, not necessary in *Ultima I*, is crucial in both programs. The same is true of Capstone's *Miami Vice* (512K Amiga, 128K Apple, 512K Atari ST, C 64, 256K IBM PC; $40) and Kyodai's *Hydlide* (C 64, 640K IBM PC; $40–$45). The former is based on the popular television show; the latter is a time-travel arcade-adventure.

WAR STORIES. Strategic Simulation Inc.'s *First Over Germany* (64K Apple, C 64, 384K IBM PC; $50) reenacts the missions of the 306th Bomb Groups during World War II. In this B-17 flight simulation, you



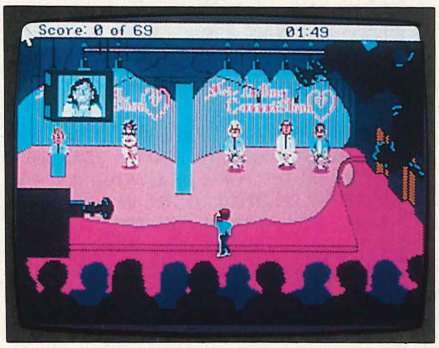
Your airplane is ready for take off from Thurleigh Airfield in SSI's First Over Germany.

must go through intense training before you're ready to tackle your 25-mission tour, including bombing raids over Germany. For military buffs, Rainbird has released two supplements to its best-selling *Universal Military Simulator*. The *American Civil War: Scenario Disk One* (512K Amiga, 512K Atari ST, 512K IBM PC, 512K Macintosh; $20) recreates the battles of Shiloh, Chattanooga, and Antietam on a three-dimensional map. *Vietnam: Scenario Disk Two* (512K Amiga, 512K Atari ST, 512K IBM PC, 512K Macintosh; $20) brings to life three fights from the battles of Dak To: Hill 823, Ngoh Kam Leat, and Hill 875. Both scenarios require the original program.

GAME HINTS

Leisure Suit Larry Goes Looking for Love (In Several Wrong Places) (Sierra On-Line, Inc.). In this graphic adventure, you help the bumbling Larry find his true love.

★ Important papers may have been discarded.
★ Take a dive while on the *USS Love Tug*.
★ A full-figured bikini is a sight to behold.
★ Larry is a real swinger.



★ Ice can melt if you use true grit.
★ Be careful of what you eat.
★ Don't be in a hurry to get your plane ticket.
★ Flying is a good time to catch up on your reading.
★ Keys aren't the only objects that can unlock doors.

—FRANK KOPRIVNIKAR
Mansfield, Ohio

Empire (Interstel, Inc.). A strategic war game based on conquest and empire building in the distant future.

★ Produce Destroyers in the early part of the game.
★ Explore all land masses and seas.

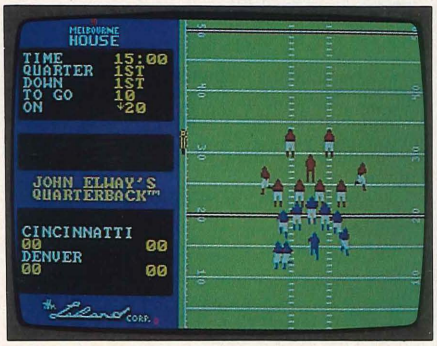


★ Manufacture fighters in cities behind the front lines, then link them to the front with the Flight Path command.
★ Explore with the first few fighters until they run out of fuel.
★ After conquering 10 to 15 cities, designate three or four of them to produce transports.
★ Place at least one army on Sentry Duty next to all conquered cities.
★ When an enemy's Transport is sighted, go after it with everything available.
★ Place a Destroyer on Random search in large areas of unexplored ocean.

—ALBERT SANDERS
Baldwin Park, California

John Elway's Quarterback (Melbourne House). Call the plays or choose from defensive formations in this football simulation that uses real NFL teams.

When playing offense:
★ Run with the ball on some passing plays.
★ Always return punts.
★ When punting, kick into the wind.
★ When throwing the Bomb, target slightly to the left or right of your receiver.



When playing defense:
★ When defending against the Bomb, retreat 15 yards.
★ An effective combination is Goal (1st down), Standard Run (2nd down), and Zone (3rd down).
★ Use Zone defense when your opponent is inside your 20-yard line.
★ When blocking a field goal or extra-point kick, wait until the kicker reaches the ball, then jump straight up.

—SUNIL PATEL
Clinton, Oklahoma

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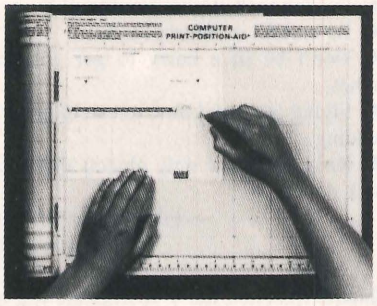
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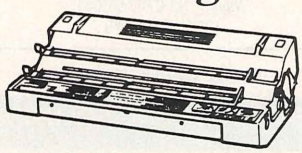
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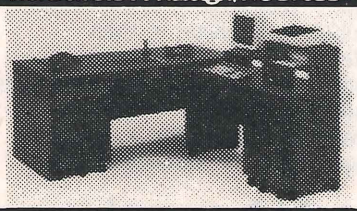


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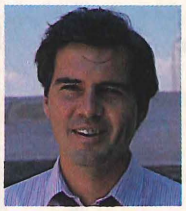
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Telecommuting: The Experiment that Worked

BY NICK SULLIVAN



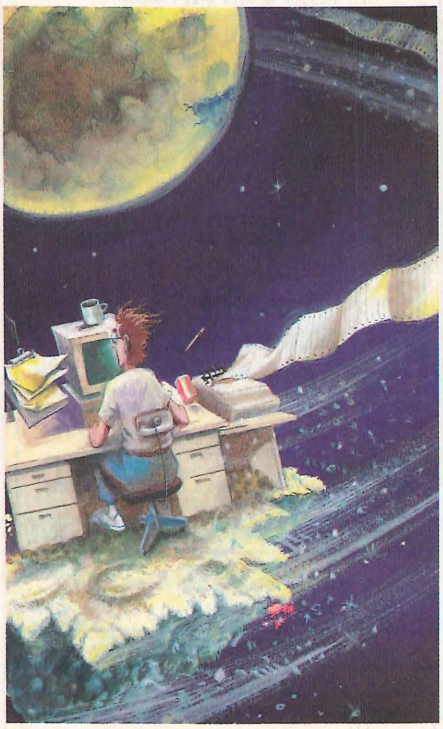
It's been nearly four years since I started telecommuting from my home in Massachusetts to the New York office. At first many of the supposed benefits of such a workstyle—more time to spend with family and flexible work hours—were theoretical. But with technological improvements, changing attitudes, and time, the benefits have become real. What started as an experiment has turned into a way of life.

I, and many others, work at home to better tailor my work to my life. My wife and I have two preschoolers, and it's best for us to share the responsibilities of driving them to day care and nursery school, giving them baths, making dinner, and attending to their other needs. Then both of our lives are balanced between work and family, and the kids (presumably) don't think of either mommy or daddy as a cartoon character that pops in and out of their lives.

When I first started telecommuting, I went to the New York office for two, three, or four days at a time, every other week. These 400-mile quasi business trips (if going to work can be considered a business trip), as well as genuine business trips, left my wife stranded in Ice Station Zebra with the kids. This clouded her otherwise sunny disposition and left me feeling like a traveling salesman, which didn't suit my constitution.

People often said that I had the best of both worlds—the country and the city, the home and the office—and sometimes I did. But the worlds weren't particularly well integrated.

I went to the office regularly because telecommuting was an experiment, and both my boss and I wanted to make sure it worked. Also, I had been working in the office for a couple of years, and there had to be a gradual transition as new systems supplanted old. Now that the new systems have kicked in, I go to the office less frequently. When I am needed, I plan a real business trip with a purpose other than just making an appearance.



I used to think of my home office as a chunk that had broken off from the main planet, careening about like a meteor lost in space.

My situation, once new and different, is now normal because it has gone on so long. New things get old fast, and when they're old they're less subject to scrutiny. The growing acceptance of remote workers across the country has certainly sped acceptance of my situation and makes others want to try it. In fact, I often go to the office and find that one or more of my colleagues are working at home for the day. That makes me feel like less of an oddball.

The emergence of the fax machine as an everyday business tool has helped cut back my travel even more. Manuscripts, reports, letters, galleys, illustrations, and photographs can go back and forth as often as needed in a day—with comments, changes, and new information added. Much of this same work can be accomplished with electronic mail, but it rarely gets done as fast. People are less likely to download, print out, and circulate a file than they are to read a fax, make notes, and then send it back. The fax machine is as indispensable as the computer.

These seemingly subtle (but actually dramatic) changes in the way people work together have given me a new outlook on the office. I used to see it as a place I had to visit every so often, as if I were on parole and reporting to my probation officer. I now see it as a bustling marketplace full of people, ideas, and products, much like the agora in ancient Greece.

I also have a different view of my home office. I used to think of it as a chunk that had broken off from the main planet, careening about like a meteor lost in space. Some callers who had been given my "home number" didn't know whether I was sleeping or working, freelance or full-time, fish or fowl. Having to clarify these matters got phone calls off to a slow start; but they've been clarified. Now I see my office as a satellite of the main office, with a clear and steady orbit. The home office is as indispensable as the main office.

My life is less chaotic, and I work better. Traveling less means I camp and decamp less, spend more time with friends and family, get more exercise, stay more organized, and spend more time working. (So does my wife!) I work better at home because that's where *my* office is. And when I go to *the* office, I have a great time.

I don't mean to imply that everything's perfect, because constant fine-tuning is needed in any workplace. But after a few frenetic years, I once again consider myself a regular part of the workplace. And if this gets printed, it means my boss agrees. ■

Senior Editor NICK SULLIVAN *telecommutes to the New York office from Massachusetts. He can be reached on CompuServe (*ID: 76703,744*) or MCI Mail (*ID: NSULLIVAN*).*

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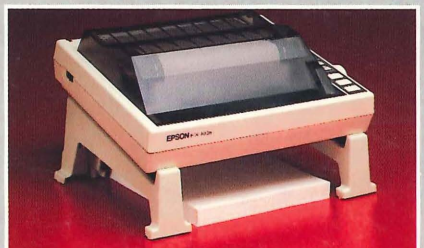
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